

## New and little known Stenopelmatoidea (Orthoptera: Ensifera) from America

## Новые и малоизвестные лжекузнечиковые (Orthoptera: Ensifera: Stenopelmatoidea) из Америки

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Data on the genera *Anabropsis* Rehn, 1901, *Glaphyrosoma* Brunner-Wattenwyl, 1888, *Stenopelmatopterus* Gorochov, 1988 and *Stenopelmatus* Burmeister, 1838, belonging to the families Anostomatidae and Stenopelmatidae, from Mexico, Guatemala, Honduras, Nicaragua, Costa Rica and Colombia are presented. Sixteen new species are described: *A. longipenna* sp. nov.; *A. weissmani* sp. nov.; *A. kasparyani* sp. nov.; *A. proxima* sp. nov.; *A. johnsi* sp. nov.; *A. chiapas* sp. nov.; *A. oaxaca* sp. nov.; *A. apteroides* sp. nov.; *G. bulbosum* sp. nov.; *G. beretka* sp. nov.; *G. tamaulipas* sp. nov.; *G. pushenkovi* sp. nov.; *G. dilutum* sp. nov.; *G. dentatum* sp. nov.; *G. karnyi* sp. nov.; *G. anderi* sp. nov. Tribe Brachyporini Gorochov, 2001 is restored from synonymy; lectotypes for *G. gracile* Brunner-Wattenwyl, 1888 and for *G. mexicanum* (Saussure, 1859) are designated; and new data on distribution of some other species are given.

Представлены данные по родам *Anabropsis* Rehn, 1901, *Glaphyrosoma* Brunner-Wattenwyl, 1888, *Stenopelmatopterus* Gorochov, 1988 и *Stenopelmatus* Burmeister, 1838, принадлежащим семействам Anostomatidae и Stenopelmatidae, из Мексики, Гватемалы, Гондураса, Никарагуа, Коста Рики и Колумбии. Шестнадцать новых видов описаны: *A. longipenna* sp. nov.; *A. weissmani* sp. nov.; *A. kasparyani* sp. nov.; *A. proxima* sp. nov.; *A. johnsi* sp. nov.; *A. chiapas* sp. nov.; *A. oaxaca* sp. nov.; *A. apteroides* sp. nov.; *G. bulbosum* sp. nov.; *G. beretka* sp. nov.; *G. tamaulipas* sp. nov.; *G. pushenkovi* sp. nov.; *G. dilutum* sp. nov.; *G. dentatum* sp. nov.; *G. karnyi* sp. nov.; *G. anderi* sp. nov. Триба Brachyporini Gorochov, 2001 восстановлена из синонимии; для *G. gracile* Brunner-Wattenwyl, 1888 и для *G. mexicanum* (Saussure, 1859) обозначены лектотипы; а также приведены новые данные по распространению некоторых других видов.

**Key words:** stenopelmatooids, taxonomy, America, Orthoptera, Anostomatidae, Stenopelmatidae, *Anabropsis*, *Glaphyrosoma*, *Stenopelmatopterus*, *Stenopelmatus*, new taxa

**Ключевые слова:** лжекузнечиковые, таксономия, Америка, Orthoptera, Anostomatidae, Stenopelmatidae, *Anabropsis*, *Glaphyrosoma*, *Stenopelmatopterus*, *Stenopelmatus*, новые таксоны

## INTRODUCTION

The paper contains descriptions of new taxa and new records on distribution of some early described species from the

tribes Anabropsini Rentz et Weissman, 1973 (Anabropsinae) and Glaphyrosomatini Rentz et Weissman, 1973 (subfamily unknown) of the family Anostomatidae Saussure, 1859 as well as from the subfamily Stenopelmatinae Burmeister, 1838 (Stenopelmatidae). These taxa are dis-

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tributed mainly in Central America (from Mexico to Panama), but Glaphyrosomatini and Stenopelmatinae are also distributed in North America, and Anabropsini, in Southeast Asia and possibly Australia; moreover, there are a few indications about the presence of some species of the mainly Central American genus *Anabropsis* Rehn, 1901 (type genus of Anabropsini) in South America and Africa: in Ecuador (Saussure & Pictet, 1897), in Colombia (Cadena-Castañeda & Cortés-Torres, 2013), and in Congo (Griffini, 1909). The data for Ecuador and Congo are very old and in need of checking.

This paper based on material from the following collections: Zoological Institute, Russian Academy of Sciences, Saint Petersburg (ZIN); Universidad Distrital Francisco José de Caldas, Colección de Artrópodos y otros Invertebrados, Bogotá, Colombia (CAUD); Colección Entomológica, Centro de Estudios en Zoología, Universidad de Guadalajara, Jalisco, México (CZUG); Arthropod Collection, Universidad del Valle de Guatemala, Ciudad de Guatemala (UVGA). Types of the new species described here are deposited also in these institutions. For a description of location of spines and spurs on the tibiae, special “armament formula” is used here. This formula is originally elaborated for representatives of the subfamily Rhaphidophorinae (Gorochov, 2010b, 2012) and adapted for Aemodogryllinae (Gorochov & Storozhenko, 2015), but it is suitable for the other representatives of Stenopelmatoidea also.

## DESCRIPTIONS OF NEW TAXA AND NEW DATA ON DISTRIBUTION

Family **ANOSTOSTOMATIDAE**  
Saussure, 1859

Subfamily **ANABROPSINAE**  
Rentz et Weissman, 1973

*Note.* This subfamily consists of two or three tribes: Anabropsini Rentz et Weissman, 1973; Brachyporini Gorochov, 2001,

**trib. ressur.**; and possibly Glaphyrosomatini Rentz et Weissman, 1973. These tribes (except Glaphyrosomatini discussed below) differs from each other by the structure of tenth abdominal tergite in male: this tergite is normal and rather large in Anabropsini, but it is narrow and interrupted by a membranous median area in Brachyporini; both these tribes are distinguished from the other subfamilies of Anostostomatinae Saussure, 1859 by the presence of a pair of short posterior lobules on the ninth abdominal tergite as well as by the tenth abdominal tergite with a pair of hooks widely separated from each other (the above-mentioned lobes are usually also widely separated from each other, but sometimes they may be fused with each other in a wider lobe). However, the Brachyporini was recently synonymized with the subfamily (!) Anostostomatinae without any explanation (Eades et al., 2016). This action is illogical and erroneous, and we restore here this tribe in its original volume (Gorochov, 2001).

Tribe **ANABROPSINI** Rentz  
et Weissman, 1973

*Note.* This tribe contains four genera: American and possibly African *Anabropsis* Rehn, 1901, Indo-Malayan *Paterdecolyus* Griffini, 1913, *Pteranabropsis* Gorochov, 1988 and *Apteranabropsis* Gorochov, 1988, and possibly *Exogryllacris* Willemse, 1963 from Australia. However, only two of them (*Anabropsis* and *Apteranabropsis*) were included in this tribe in the Orthoptera Species File (Eades et al., 2016); the others and Australian *Leponosandrus* Gorochov, 2001 were put in Anabropsinae out of any tribe. In reality, *Paterdecolyus* and *Pteranabropsis* (as a minimum) must be also included in Anabropsini, because they are closely related to *Anabropsis* and *Apteranabropsis*. In addition, *Leponosandrus* does not belong to Anabropsinae and is a member of unknown but another subfamily of Anostostomatidae.

## Genus *Anabropsis* Rehn, 1901

*Schoenobates* Saussure, 1859

*Note.* This genus is here divided into four species groups on the base of development of their wings. Such division was initiated by Cadena-Castañeda & Cortés-Torres (2013) and may be useful for the determination of species in this genus.

### Alata Group

*Note.* This group is established by Cadena-Castañeda & Cortés-Torres (2013). It includes a few macropterous American species: *Schoenobates alatus* Brunner-Wattenwyl, 1888 (Ecuador); *A. marmorata* Rehn, 1905 (Costa Rica); *A. rentzi* Cadena-Castañeda & Cortés-Torres, 2013 (Colombia); and two new species described here. Representatives of this group (Figs 5, 7, 26, 34) are habitually similar to those of the Asiatic genus *Pteranabropsis*.

### *Anabropsis longipenna* Gorochov et Cadena-Castañeda, sp. nov. (Figs 1–16)

*Holotype.* Female, **Mexico**, “NE Chiapas”, Ocosingo Distr., Selva Lacandona between Montes Azules Biosphere Reserve and Bonampak Natural Monument (near Guatemala), environs of Lacanja-Chansayab Vill., primary forest, at night, 20–27.V.2007, M. Berezin, E. Tkatsheva (ZIN).

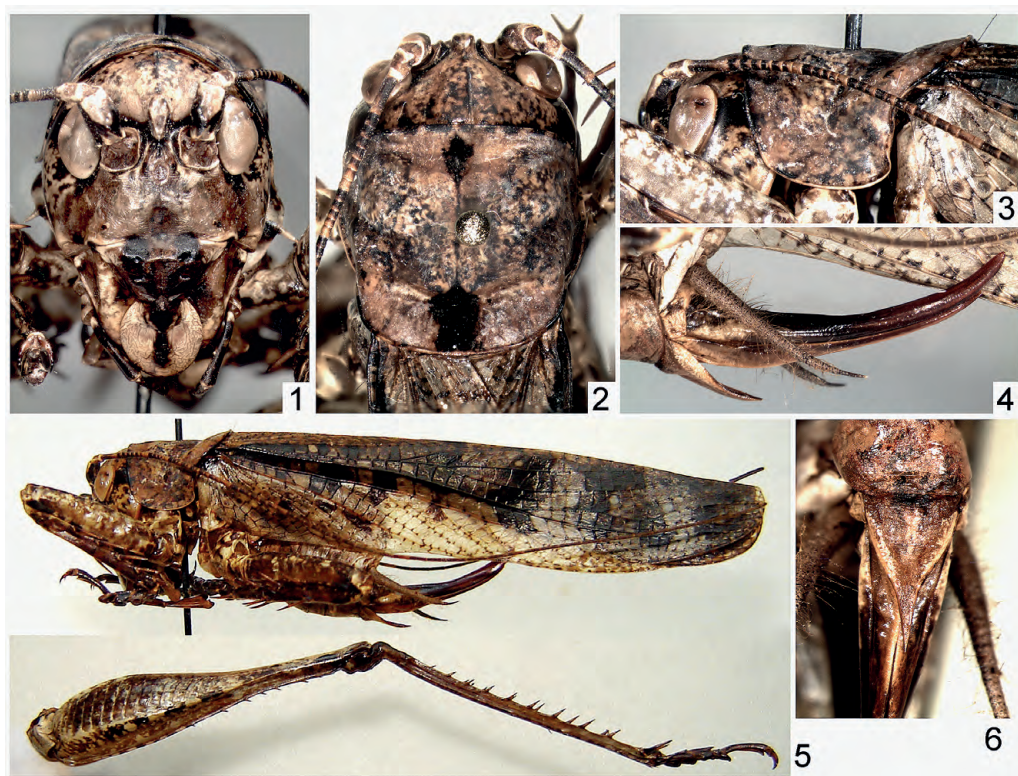
*Paratypes.* **Guatemala:** 2 males and 2 females, Baja Verapáz, Purulhá, Ranchitos del Quetzal, 1650 m., latitude 15.215747, longitude 90.219087, 1.VII.2012, J. Monzón (CAUD); 8 females, San Marcos, Camino Fraternidad a Bojonal, latitude 14.9459, longitude 91.8806, 1600 m, 22.V.2012, J. Monzón, F. Camposeco (CAUD); 6 females, Suchitepéquez, Santa Bárbara Refugio del Quetzal, latitude 14.5417598494, longitude 91.1972949818, 1600 m, 11.V.2013, J. Monzón, F. Camposeco (CAUD).

*Description.* Female (holotype). Body rather large for this genus. Colouration almost marble, yellowish grey with numerous darker marks on head, pronotum, tegmina and legs (some of these marks blackish;

Figs 1–3, 5), but hind wings mostly darkened with small whitish spots (such spots absent in all other species of Alata Group), and abdomen more or less light with greyish brown cerci and brown to dark brown most part of ovipositor (Fig. 4). Structure of head typical of *Anabropsis*, but dorsum with low median keel, and ocelli small (diameter of median ocellus almost equal to that of proximal segments in antennal flagellum; lateral ocelli slightly smaller); pronotum with slight (poorly distinct) median keel, with rather long and rounded posterior lobe separated from low lateral lobes by distinct humeral notch (posterior edge of latter lobes slightly sinuate; Fig. 3); prothoracic sternite with a pair of spine-like processes near each other; mesothoracic sternite with a pair of long finger-like processes near each other; metathoracic sternite with a pair of wide angular projections having roundly convex lateral edges; wings very long, with tegmina reaching apices of hind wings and about 5.4 times as long as pronotum (Fig. 5); legs rather robust, with 2–3 inner ventral denticles on fore femora, with two outer ventral and a pair of apical denticles on middle femora, with four inner and 6–7 outer ventral denticles (these denticles somewhat longer than previous ones) on hind femora, and with very long dorsal and ventral spines on fore and middle tibiae (armament of all tibiae following: di, d2sa, v2, v2, v2, v2, v2a / di, de, di, d2, d2sa, v2, v2, v2, v2, v2a / d9e-8i, d2sa, v3e-vi, 6a); genital plate elongately triangular, with spine-like distal part and arcuately convex lateral edges of rest part (Figs 6); ovipositor moderately short (hind femur about 2.4 times as long as ovipositor), with distal part weakly and arcuately curved upwards, and with apical part narrowly rounded (Fig. 4).

*Variations.* Females from Guatemala slightly smaller (length of body with wings 48–50 mm), usually with pink stripes and with genital plate as in Fig. 13 (in this photograph, the apical spine-like part of genital plate looking shorter than in holotype; however, this part partly invisible, because





**Figs 1–6.** *Anabropsis longipenna* sp. nov., holotype (female): 1, head in front; 2, head with pronotum from above; 3, upper half of head with pronotum from side; 4, ovipositor from side; 5, body and hind leg from side; 6, genital plate from below.

it somewhat curved upwards and immersed between lateral halves of ovipositor).

**Male.** General appearance similar to that of female (Figs 7–9) but somewhat smaller, with colouration of most part of genital plate from brown to dark brown. Ninth abdominal tergite with a pair of rather wide and heavily sclerotized plate-like lobules on posterior edge; these lobes with rounded outer edge and slightly sharpened posterior and inner edges (Figs 10, 11, 14, 15); tenth abdominal tergite with posterior edge having broad and not very deep notch, with a pair of widely rounded lobes around this notch, and with a pair of hooks located near these lobes (bases of these hooks covered with plate-like lobules of ninth tergite; Figs 10, 11, 14, 15); each paraproct as long as half of cercal length, and with long and almost finger-like distal process slightly curved upwards; geni-

tal plate approximately as long as wide, with somewhat narrower distal part, with almost angularly rounded and moderately deep posteromedian notch, and with rather thin cylindrical styles which as long as quarter of length of this plate (Figs 12, 16).

**Length in mm.** Body: male 18–20, female 23–25; body with wings: male 36–38, female 48–56; pronotum: male 6, female 7–8.7; tegmina: male 33–35, female 40–47; hind femora: male 20, female 24–29; ovipositor 11–12.5.

**Comparison.** The new species is similar to *A. alata*, *A. marmorata*, *A. rentzi* and the genus *Pteranabropsis* from Southeast Asia; all these taxa have long wings and distinct humeral notches in the pronotum. However, these species are probably primitive representatives of two genera (mainly American one and Asiatic one), which had similar but





**Figs 7–13.** *Anabropsis longipenna* sp. nov., paratypes (7–12, male; 13, female): 7, body from side; 8, 9, head with pronotum from side (8) and from above (9); 10, abdominal apex from behind and slightly from above; 11, left lobule and left hook of ninth and tenth abdominal tergites, respectively (caudal view); 12, abdominal apex from below; 13, genital plate from below.

independent adaptive radiation in these regions with formation of numerous short-winged and apterous species. Similarity of the American representatives to each other is more distinct than in Asiatic ones; it is a

reason for division of the Asiatic representatives into three genera (*Paterdecolyus*, *Pteranabropsis* and *Apteranabropsis*), and for inclusion of American ones in the same genus *Anabropsis*. Possibly, the tribe Anabropsini

appeared in America later than in Asia, and it might penetrate America from Asia.

From these congeners, *A. longipenna* differs in significantly longer wings (in *A. alata*, *A. marmorata* and *A. rentzi*, tegmen is 4–4.4 times as long as pronotum; in *A. longipenna*, this ratio is 5.4–5.8) and a less curved ovipositor. Additionally from *A. rentzi* (this species is most similar to the new species in a more or less similar pattern on the pronotal disc, the presence of a slight median pronotal keel, and structure of the male abdominal apex), it is distinguished by more sloping and rounded (less angularly projected) short lobes of the tenth abdominal tergite located between its hooks but near them (for comparison see Figs 14, 15 and 17, 18), a clearly deeper posteromedian notch of the male genital plate (see Figs 16 and 19), and somewhat longer ovipositor (in *A. rentzi*, hind femur is about 2.6 times as long as ovipositor) and spine-like distal part of the female genital plate. From *A. alata*, the new species additionally differs in the presence of a slight median pronotal keel (it is absent in *A. alata*), plate-like lobules of male ninth abdominal tergite heavily sclerotized and darkened (see 14, 15 and 23, 24), tenth abdominal tergite in male with a distinct but rather shallow posteromedian notch (this tergite in *A. alata* is practically without such notch), and a slightly deeper posteromedian notch of the male genital plate (see Figs 16 and 25). From all the species of *Pteranabropsis*, *A. longipenna* differs in a much shorter ovipositor as well as in some other characters.

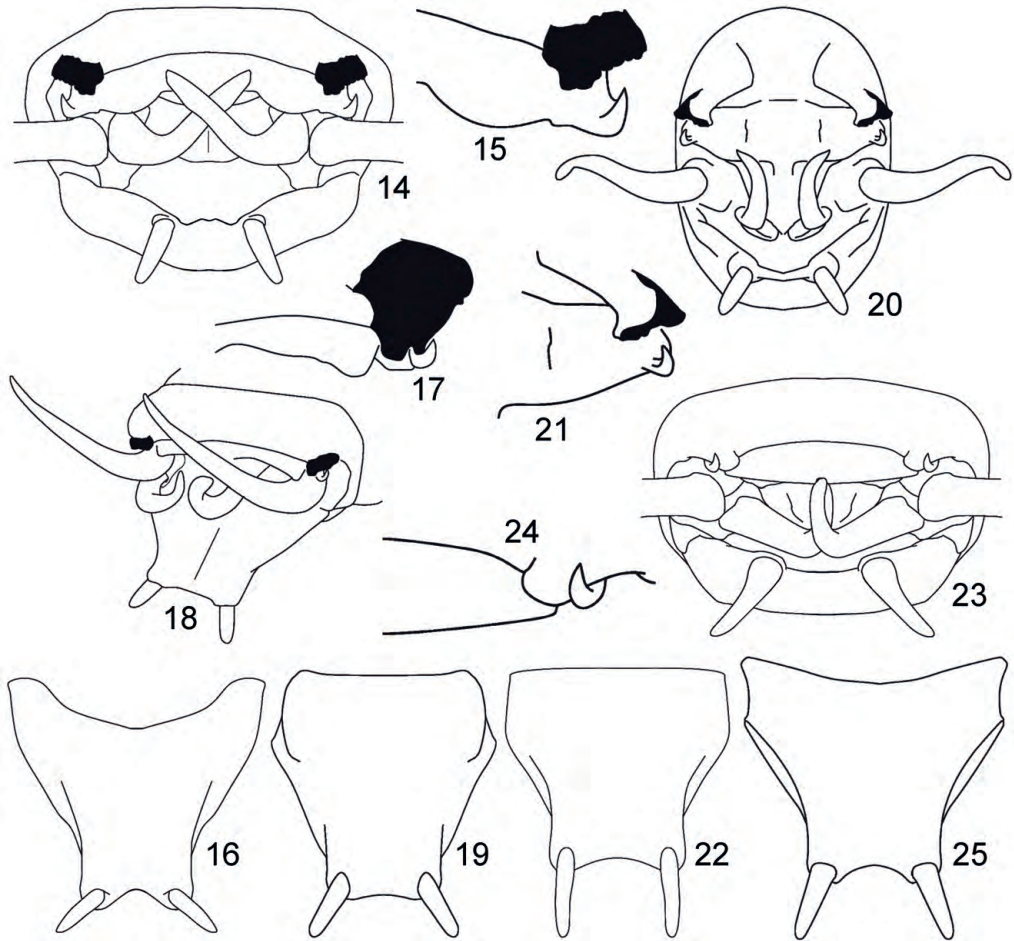
**Etymology.** This species name consists of the Latin words “longus” (long) and “penna” (wing).

***Anabropsis weissmani*** Cadena-Castañeda et Gorochov, **sp. nov.**  
(Figs 20–22, 26–33, 44, 45)

**Holotype.** Male, **Guatemala**, Alta Verapaz, Chelemhá, cloud forest edge, latitude 15.38590, longitude 90.06254, 2050 m, 12.IX.2014, K. Eissermann (CAUD).

**Description.** Male (holotype). General appearance similar to that of *A. longipenna* and other known representatives of Alata Group, but with following features: body larger than in these species; colouration brown with several dark brown and black spots scattered throughout body, with yellow cream pronotal border as well as marks on rest pronotal part, head, abdomen, legs and tegmina (Figs 26–32); head with median keel on dorsum and small ocelli (diameter of median ocellus similar to that of lateral ocellus and slightly greater than length of antennal pedicel; Fig. 27); pronotum as in *A. longipenna* but without pink spots (Figs 28, 29); prothoracic sternite with spine-like processes longer than in *A. longipenna*; metathoracic sternite with a pair of wide angular projections having straight lateral edges; wings very long, with tegmina reaching apices of hind wings and about 6 times as long as pronotum; legs rather robust, with four inner ventral denticles on fore femora, with three outer ventral and a pair of apical denticles on middle femora, with three inner and seven outer ventral denticles on hind femora, and with very long dorsal and ventral spines on fore and middle tibiae (armament of tibiae following: di, d2sa, v2, v2, v2, v2, v2a / di, de, di, d2, d2sa, v2, v2, v2, v2, v2a / d8e-7i, d2sa, v3e-vi1, 6a); ninth abdominal tergite with a pair of rather narrow plate-like lobules having rounded lateroapical projection and somewhat hooked medioapical one (heavily sclerotized part of these lobules narrow and situated along their posterolateral edges; Figs 20, 21); tenth abdominal tergite with dorsomedian region slightly inflated and with a pair of hooks on each lateral side (these hooks partly covered with plate-like lobules of ninth abdominal tergite; Figs 21, 33); paraprocts similar to those of *A. longipenna* (Figs 30–32); genital plate also as in this species but with significantly shallower posteromedian notch and longer styles (these styles as long as half of length of this plate; Figs 22, 30); genitalia as in Figs 44, 45.

Female unknown.



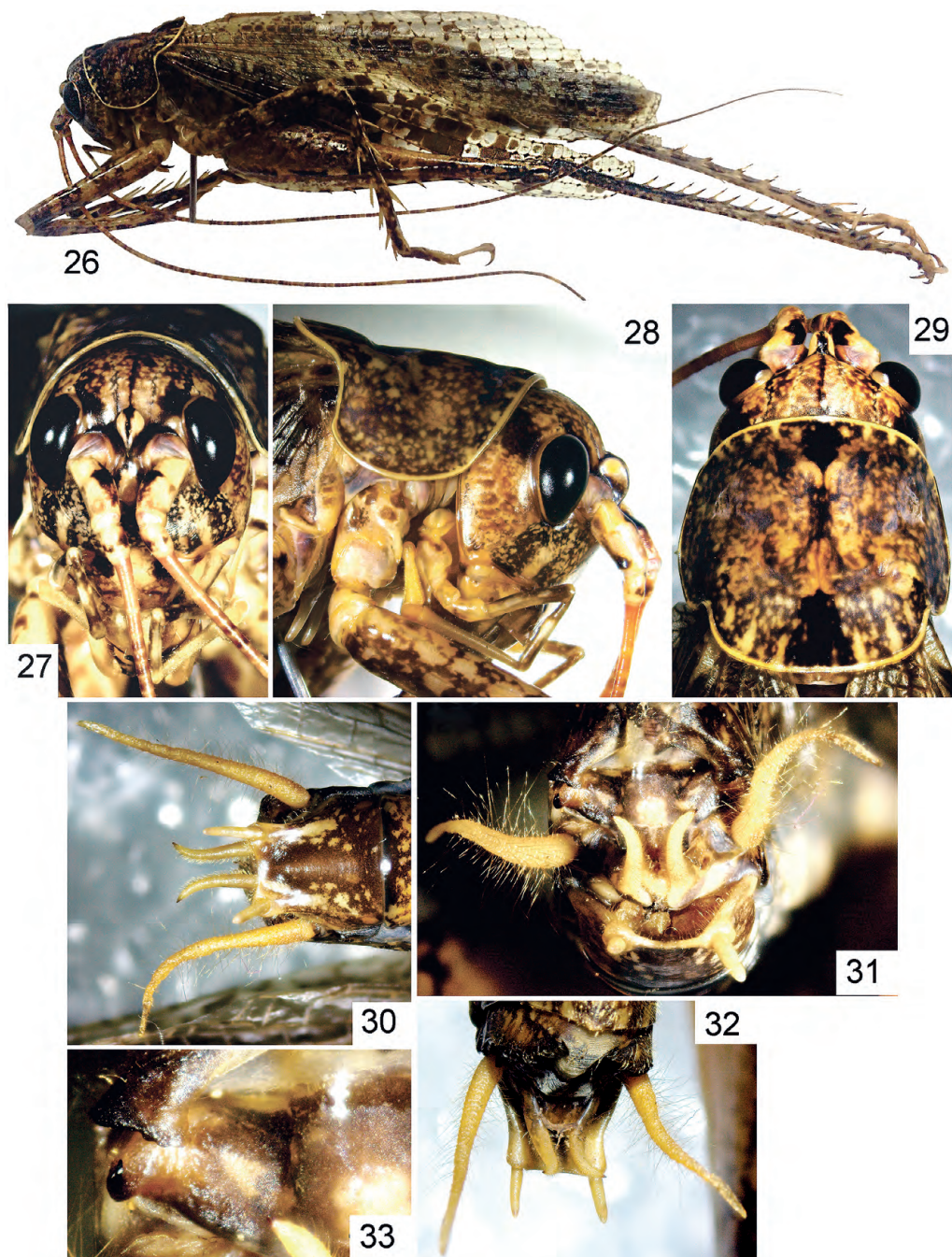
**Figs 14–25.** *Anabropsis* (Alata Group), male: 14–16, *A. longipenna* sp. nov.; 17–19, *A. rentzi* Cadena-Castañeda et Cortés-Torres; 20–22, *A. weissmani* sp. nov.; 23–25, *A. alata* (Br.-W.). Abdominal apex from behind (14, 20, 23) and partly from side, above and behind (18); right lobule and right hook of ninth and tenth abdominal tergites, respectively (caudal view) (15, 17, 21, 24); genital plate from below (16, 19, 22, 25) [heavily sclerotized parts of lobules of ninth abdominal tergite covered with black].

Length in mm. Body 25; body with wings 45; pronotum 7.5; tegmina 39; hind femora 26.

**Comparison.** The new species is similar to *A. longipenna* in very long wings which are somewhat longer than in the latter species (tegmina approximately 6 times as long as pronotum in *A. weissmani*, and this ratio is 5.4–5.8 in *A. longipenna*) and distinctly longer than in all the other congeners. Also it differs from the latter species and *A. rentzi*, in narrower plate-like lobules of the ninth

abdominal tergite of male, a distinctly narrower heavily sclerotized part of these lobules and longer styles of the male genital plate; and additionally from *A. longipenna*, in a less deep posteromedian notch of the male genital plate. From *A. alata*, the new species is additionally distinguished by the presence of median pronotal keel and of heavily sclerotized parts in the plate-like lobules of ninth abdominal tergite in male, and a somewhat shallower posteromedian notch of the male genital plate (see Figs 22 and 25).





**Figs 26–33.** *Anabropsis weissmani* sp. nov., holotype (male): 26, body from side; 27, head in front; 28, 29, head with pronotum from side (28) and from above (29); 30–32, abdominal apex from below (30), from behind (31), and from above (32); left lobule and left hook of ninth and tenth abdominal tergites, respectively (caudal view) (33).

**Etymology.** This species is named in honor of the orthopterist D.B. Weissman (California Academy of Sciences), in recognition of his contribution to the study of Stenopelmatoidea and other groups of Orthoptera.

***Anabropsis alata***

(Brunner-Wattenwyl, 1888)

(Figs 23–25, 34–40, 46, 47)

*Schoenobates alatus* Brunner-Wattenwyl, 1888

**New material. Colombia:** male, Nariño, Barbacoas, Reserva Natural Río Nambi, 1°17'44''N, 78°4'45.3''W, 1335 m., 1.XII.2002, V. Cabrera (CAUD).

**Redescription.** Male. Body brown with several black and yellow spots on head, pronotum, legs and tegmina (Figs 34–39). Head with slight median keel on the dorsum, ocelli small (diameter of median ocellus almost equal to that of proximal segment of antennal flagellum; lateral ocelli slightly smaller) (Fig. 35). Pronotum similar to that of other representatives of Alata Group, but its median keel undeveloped; pterothoracic sternite with a pair of spine-like processes near each other; mesothoracic sternite with a pair of long finger-like processes near each other; metathoracic sternite with a pair of wide angular projections having roundly convex lateral edges. Wings long, with tegmina 4.2 times as long as pronotum. Fore femora with two inner ventral denticles; middle femora with two outer ventral and a pair of apical denticles; hind femora with three inner and six outer ventral denticles (these denticles somewhat longer than previous ones); tibiae with following tibial armament: di, v2, v2, v2, v2, v2a / di, de, di, d2, d2sa, v2, v2, v2, v2a / d7e–8i, d2sa, v3e–vi, 6a (dorsal and ventral tibial spines of fore and middle legs very long). Ninth abdominal tergite with posterolateral plate-like lobules weakly sclerotized and with rounded edges (Figs 23, 24); tenth abdominal tergite with posteromedian edge somewhat projected backwards, with dorsomedian region slightly inflated, with hook in each posterolateral

corner mostly covered by plate-like lobule of ninth abdominal tergite (Figs 23, 24, 37, 38, 40); paraprocts as long as one third of cerci and curved as in congeners previously described here (Figs 37–39); genital plate as long as wide, with a distinct notch (this notch shallower than in *A. longipenna* and deeper than in *A. rentzi* and *A. weissmani*; for comparison see Figs 16, 19, 22, 25), and with cylindrical styles as long as third of genital plate (Fig. 25, 39). Genitalia as in Figs 46, 47.

Female unknown.

Length in mm. Body 21; body with wings 37; pronotum 7; tegmina 29; hind femora 23.

**Comparison.** The species considered is similar to *A. marmorata* and *A. rentzi* in the ratio of tegminal and pronotal lengths from 4 to 4.4 but differs from all the other representatives of Alata Group in the absence of spots on the anterior and posterior areas of pronotal disk, as well as in more weakly developed and not heavily sclerotized plate-like lobules of the ninth abdominal tergite in male (Figs 24, 40).

**Remark.** Sex of the holotype of this species from Ecuador is unknown, because abdomen of this specimen is missing. Thus, the first description of a complete male (including its abdominal structure) is here given.

***Anabropsis rentzi*** Cadena-Castañeda

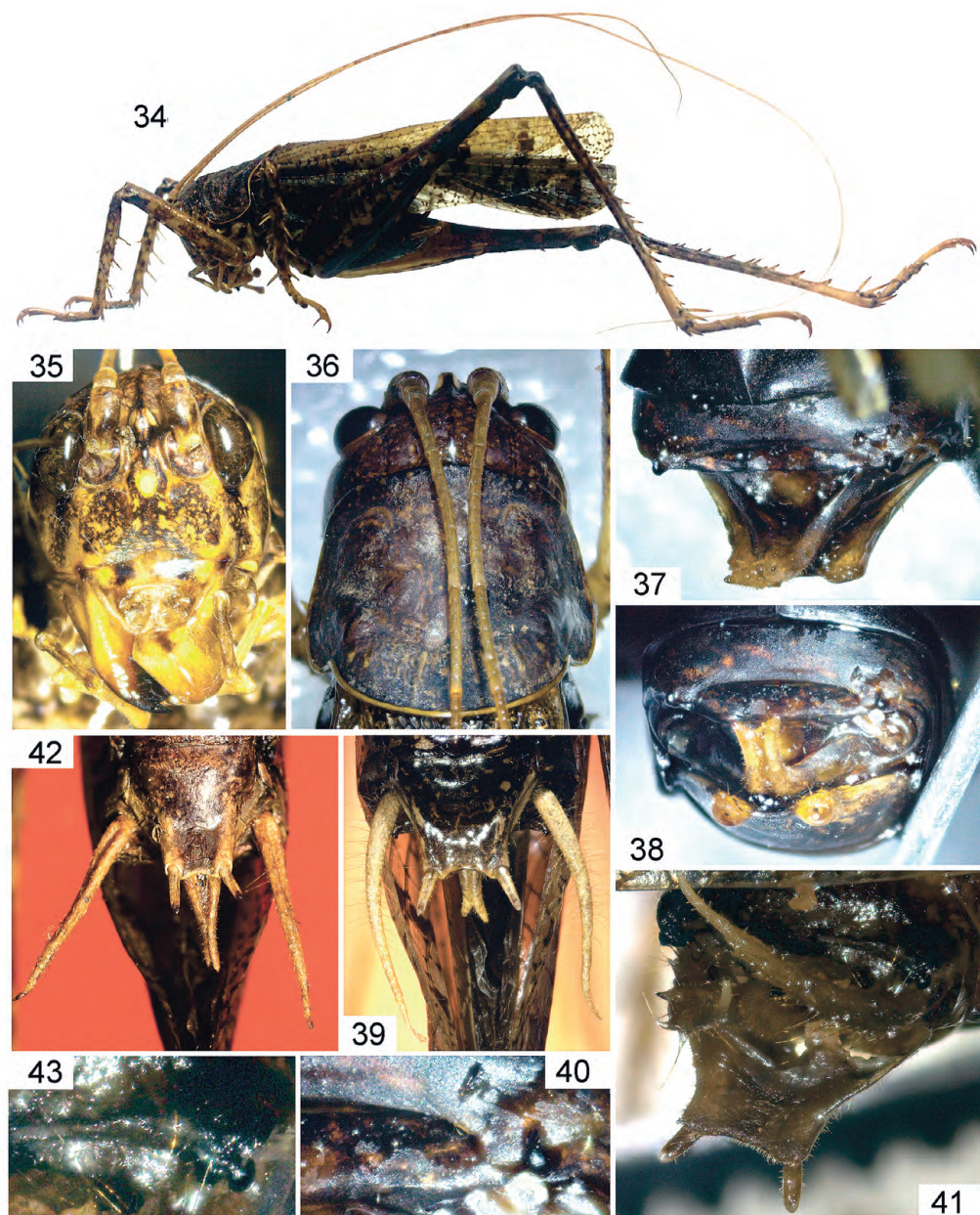
& Cortés-Torres, 2013

(Figs 17–19, 41–43, 48, 49)

**New material. Colombia:** male, Antioquia, Yalí, 6°40'6.80''N, 74°47'43.06''W, 1120 m, J. Cardona (CAUD).

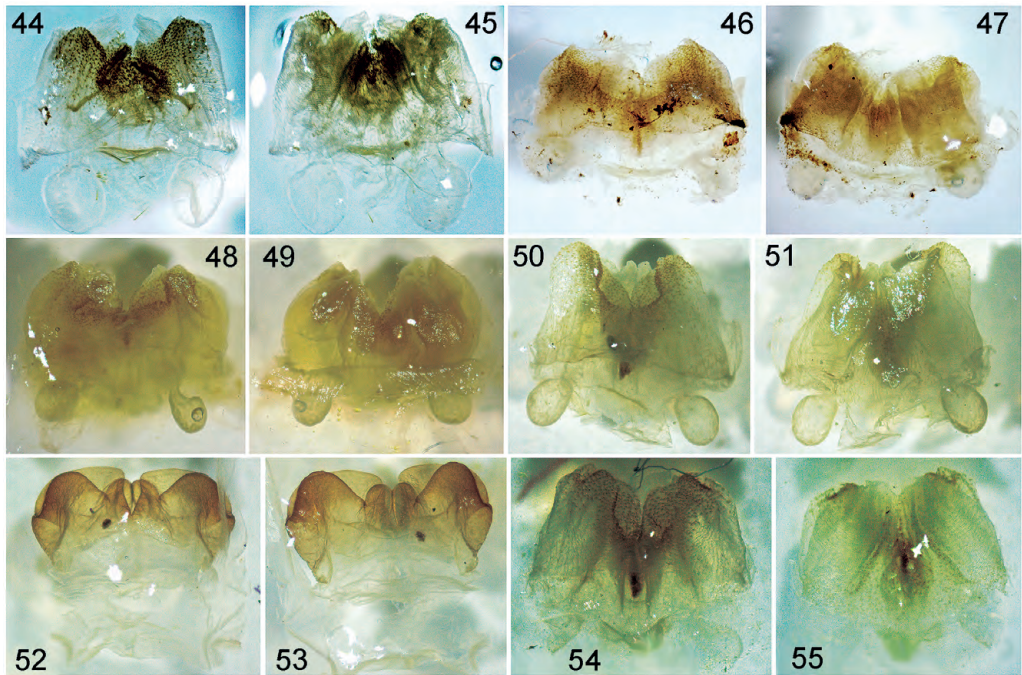
**Note.** The specimen here recorded does not show distinct differences from the male holotype. The original description of this species is supplemented by the following characters: plate-like lobules of the ninth abdominal tergite of male are heavily sclerotized and gently denticulate, somewhat similar to those of *A. longipenna* (see Figs 14, 15 and 17, 18); posterior edge of the





**Figs 34–43.** *Anabropsis* (Alata Group), male: 34–40, *A. alata* (Br.-W.); 41–43, *A. rentzi* Cadena-Castañeda et Cortés-Torres. Body from side (34); head in front (35); head with pronotum from above (36); abdominal apex from above (37), from behind (38), from below (39, 42), and partly from above and behind (41); right lobule and right hook of ninth and tenth abdominal tergites, respectively (caudal view) (40, 43).





**Figs 44–55.** *Anabropsis*, male: 44, 45, *A. weissmani* sp. nov.; 46, 47, *A. alata* (Br.-W.); 48, 49, *A. rentzi* Cadena-Castañeda et Cortés-Torres; 50, 51, *A. aptera* (Br.-W.); 52, 53, *A. apteroides* sp. n.; 54, 55, *A. mexicana* (Sauss.). Genitalia from below (44, 46, 48, 50, 52, 54) and from above (45, 47, 49, 51, 53, 55).

tenth abdominal tergite in male has almost angular projection near each hook of this tergite (Figs 17, 18); male genitalia are as in Figs 48, 49.

Length in mm. Body 21; body with wings 42; pronotum 7; tegmina 31; hind femora 24.

### Mexicana Group

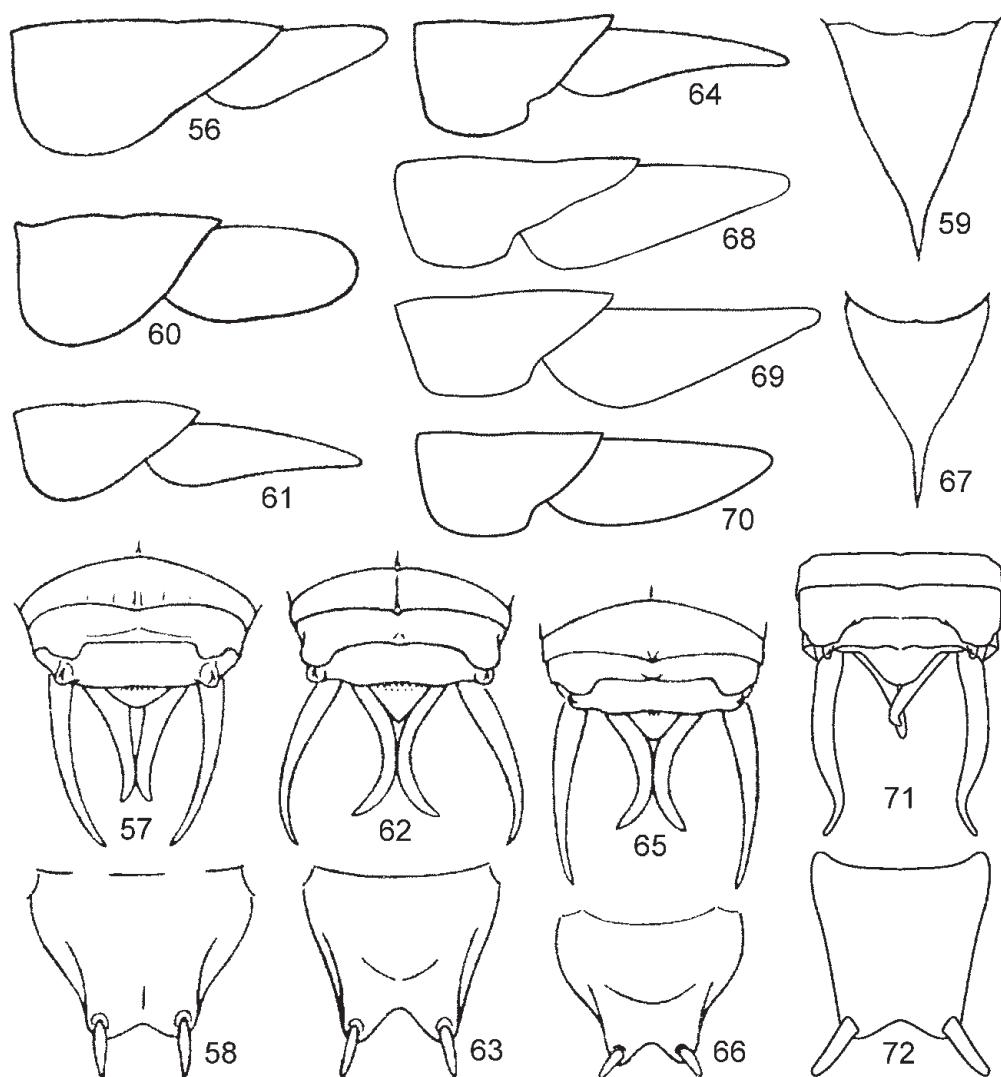
*Note.* This group, also established by Cadena-Castañeda & Cortés-Torres (2013), includes a few species with significantly shortened wings which are nonetheless protruding far behind the pronotum: *Schoenobates mexicanus* Saussure, 1859 from Mexico (Figs 54, 55, 64–86); *A. costaricensis* Rehn, 1905 from Costa Rica (Fig. 60); *A. spinigera* Gorochov, 2001 from Costa Rica (Figs 56–59); *A. modesta* Gorochov, 2001 from Mexico (Figs 61–63).

### *Anabropsis mexicana* (Saussure, 1859) (Figs 54, 55, 64–86)

*Schoenobates mexicanus* Saussure, 1859

*New material.* **Mexico:** male, “Mexico” (ZIN); female, “Mexico, Jarnapam” (ZIN). **Guatemala:** 2 females, Huehuetenango, Barillas, San Ramón, Río Bravo, latitude 15.846620, longitude 91.2322045, 600 m, 18–28.VII.2011, J. Monzón (CAUD); female and male, Zacapa, Above of Unión, 1400 m, 22.IX.1990, P. Negreros (UVGA); female, same data as for previous female, but 5.VII.1996, J. Schuster (UVGA); 2 females, Izabal, S. E. Morales, near North Black, 1150 m, 27.VI.1998, E. Cano, J. Monzón (UVGA). **Costa Rica:** male, Cartago Department, Reserva Indígena Bajo Chirripó, cerca Platanillo, latitude 9.820483, longitude 83.416317, 1280 m., 24.IV.2012, J. Monzón, F. Camposeco (CAUD).

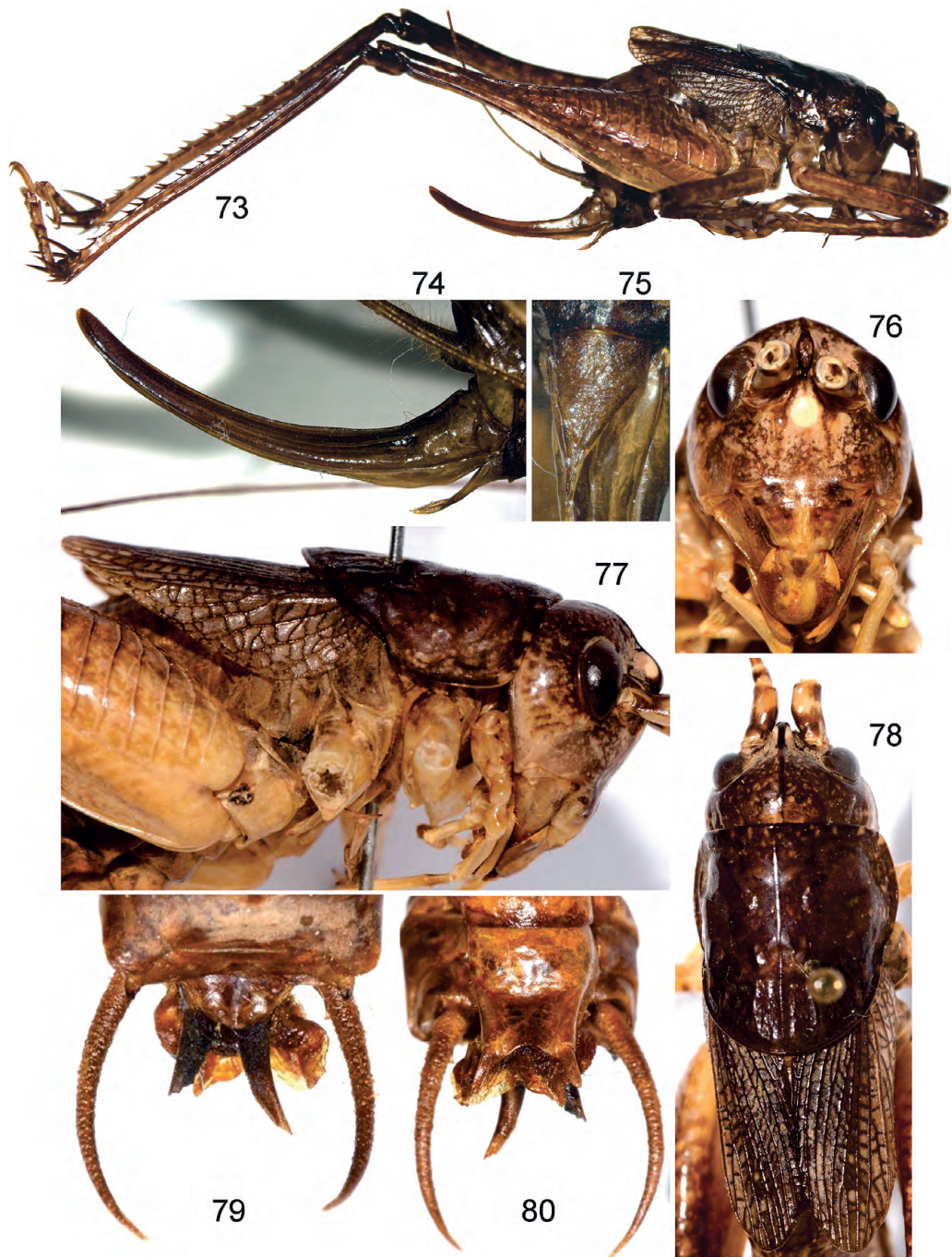
*Note.* These specimens are rather diverse in the shape of pronotum (its hind lobe af-



**Figs 56–72.** *Anabropsis* (Mexicana Group): 56–59, *A. spinigera* Gor.; 60, *A. costaricensis* Rehn; 61–63, *A. modesta* Gor.; 64–72, *A. mexicana* (Sauss.) (64–67, Mexico; 68, 69, Guatemala; 70–72, Costa Rica). Pronotum with tegmen from side (56, 60, 61, 64, 68–70); male abdominal apex without genital plate from above (57, 62, 65, 71); male genital plate from below (58, 63, 66, 72); female genital plate from below (59, 67). [56–67, after Gorochov (2001)].

ter the humeral notches may be longer or shorter; Figs 64, 68–70, 73, 77, 78, 81, 83, 84); there are also differences in the shape of male genital plate (Figs 66, 72, 80, 86) and in some other morphological structures (Figs 65, 71, 74, 75, 76, 79, 82, 85). Possibly, these specimens belong to a few different subspecies or closely related species. How-

ever, such study may start only after examination of Saussure's type material, because this material was described without indication of many important characters (Saussure, 1859), and our determination of this species is based on the pictures published somewhat later (Saussure et Pictet, 1897: tab. 14, figs 12–15). Thus, at present this

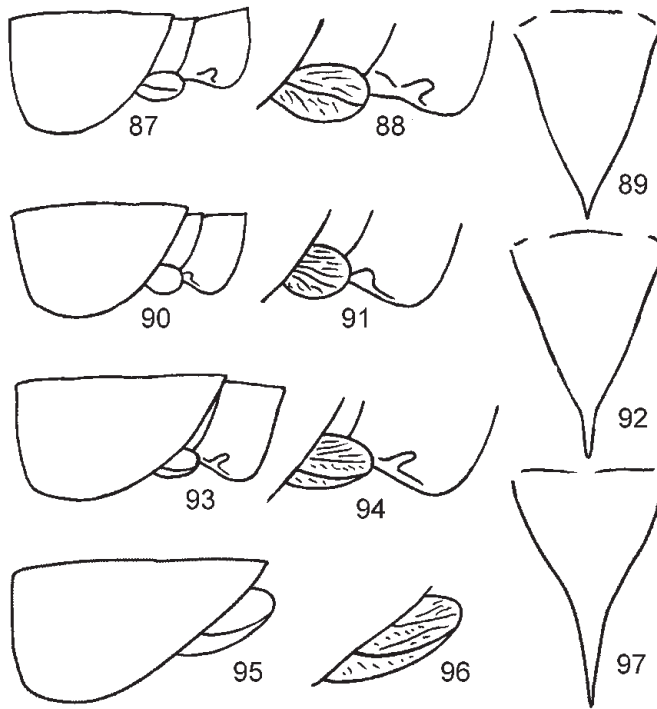


**Figs 73–80.** *Anabropsis mexicana* (Sauss.), Guatemala: 73–75, female from Rio Bravo; 76–80, male from Zacapa. Body from side (73); ovipositor from side (74); genital plate from below (75); head in front (76); head, pronotum and tegmina from side (77) and from above (78); abdominal apex from above (79) and from below (80).





**Figs 81–86.** *Anabropsis mexicana* (Sauss.), Costa Rica (male): 81, body from side; 82, head in front; 83, head and pronotum from side; 84, head, pronotum and tegmina from above; 85, abdominal apex from above; 86, genital plate from below.



**Figs 87–97.** *Anabropsis* (Microptera Group), female: 87–89, *A. microptera* Gor.; 90–92, *A. proxima* sp. nov.; 93, 94, *A. kasparyani* sp. nov.; 95–97, *A. johnsi* sp. nov. Pronotum with pterothoracic tergites exposed, lateral view (87, 90, 93); pronotum with rudimentary tegmen in rest condition (pterothoracic tergites not exposed, completely covered with hind pronotal lobe and tegmina), lateral view (95); rudiments of tegmen in imaginal position and of hind wing in nymphal position on lower parts of pterothoracic tergites, lateral view (88, 91, 94); visible part of tegminal rudiment in imaginal position, lateral view (96); genital plate from below (89, 92, 97). [87, 89, after Gorochov (2001)].

species (or species complex) is determined almost exclusively by the presence of noticeable humeral notches on the pronotum; this character clearly separates it from all the other species of Mexicana Group. Thus, some previous indications of this species from Mexico and Costa Rica (Barranco, 2010) may refer to this species complex.

### Microptera Group

*Note.* This group is here established. It includes some very short-winged representatives with their tegmina rudimentary, not protruding behind the posterior pronotal edge but lying in imaginal position (i. e. with the costal edge directed downwards) and usually partly visible in rest condition,

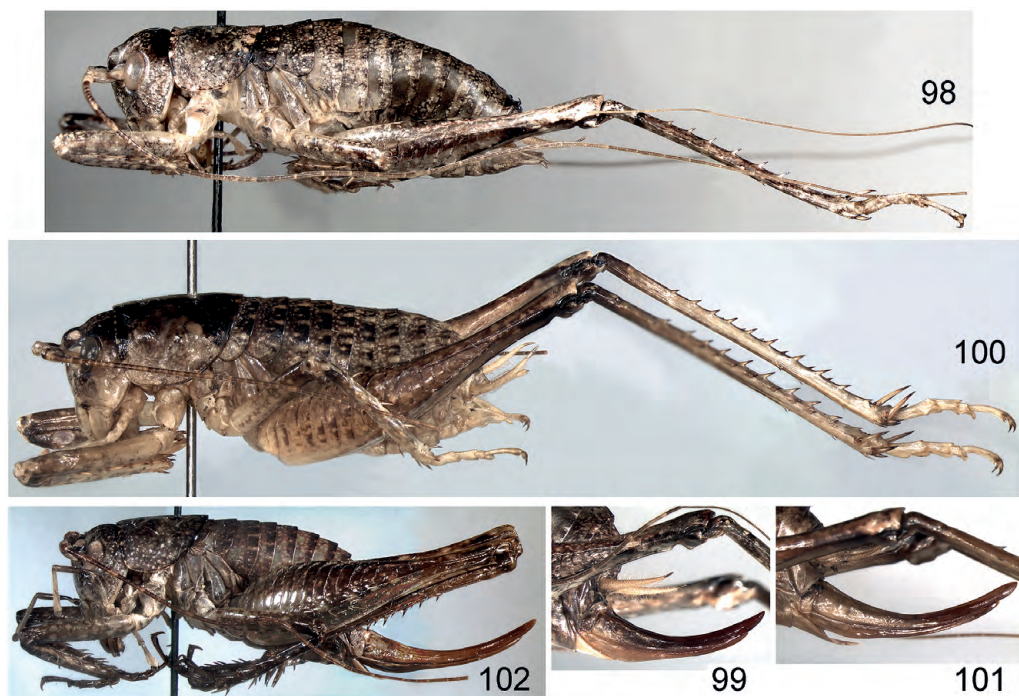
and with the rudiments of hind wings lying in nymphal position (i. e. with the costal edge directed more or less upwards): *A. microptera* Gorochov, 2001 from Mexico (Figs 87–89, 124, 125, 133–135) and three new species described here.

***Anabropsis kasparyani* Gorochov et Cadena-Castañeda, sp. nov.**  
(Figs 93, 94, 126–132)

*Holotype.* Male, **Mexico**, Tamaulipas State, environs of Gomez Farias Town, “Alta Cima”, 900 m, 19.VIII–9.IX.2000, D. Kasparyan (ZIN).

*Paratype.* **Mexico**: male, same state as for holotype, Balcon de Montezuma (Montezuma Balcony), near Victoria City, 23°35′28.15″N, 99°10′22.83″W, 5.V.2016, 1114 m, O. Cadena-Castañeda, M. Gonzales (CAUD); male,





**Figs 98–102.** *Anabropsis*: 98, 99 – *A. chiapas* sp. nov.; 100, 101 – *A. oaxaca* sp. nov.; 102 – *A. proxima* sp. nov. Body of male (98, 100) and female (102) from side; female abdominal apex from side (99, 101).

“Mexico, Cd. Victoria, 33 km S, Malesa trap”, 16–23.I.2000, D. Kasparyan (ZIN).

**Description.** Male (holotype). General appearance more or less similar to that of *A. microptera*, but body distinctly larger and colouration somewhat different: head yellowish (almost whitish) with dark brown areas on dorsum and on rostrum as well as small spot near ventral edge of each eye and 4 large dots along clypeal suture, with greyish brown rest of rostrum (but ocelli whitish) as well as lower half of clypeus and spots on scapes, with brown to blackish ventromedial parts of mandibles, with greyish labrum, and with numerous small brown to light brown spots on proximal part of rest of antennae (middle and distal parts of antennal flagellum almost light brown); pronotum with disc and upper halves of lateral lobes having numerous and rather small yellowish, greyish and dark brown marks, and with lower parts of these lobes yellowish and having greyish tinge (Figs 126–128); other ter-

gites marbled (yellowish-greyish) with dark brown band along most part of each posterior edge crossed by distinct yellowish longitudinal stripes, but 3 posterior abdominal tergites without dark marks (only hooks of last tergite dark); tegmina dark brown; rudiments of hind wings light; legs also marbled (yellowish with light brown) and with darkened areas near each femur-tibia articulation, with numerous small brown marks along dorsal surface of each hind femur, and with almost completely yellowish tarsi; rest of body yellowish with brown outer spot on proximal part of each paraproct and with greyish cerci and distal parts of paraproctal processes. Head with low median keel on dorsum, with rostrum slightly longer than in *A. microptera* (for comparison see Figs 127 and 133), and with scape almost 1.5 times as wide as space between antennal cavities (Fig. 126). Pronotum clearly longer than in *A. microptera* (see Figs 93, 127, 128 and 87, 133, 134), with low median keel (such



keel more or less developed on some more posterior tergites also), with almost vertical anterior edge of lateral lobe, and with roundly oblique posterior edge of this lobe; posterior part of pronotal disc (as well as of majority of other tergites) with distinct low longitudinal ridges; thoracic sternites as in *A. microptera*, each with a pair of angular projections (prothoracic projections almost spine-like). Tegmina also similar to those of *A. microptera* but somewhat longer, distinctly projecting behind lateral parts of mesonotum (in *A. microptera*, tegmina barely projecting behind these parts) and with distinct longitudinal venation having most convex longitudinal vein situated near costal edge (in *A. microptera*, most convex longitudinal vein situated in median part of tegmen; for comparison see Figs 87, 88 and 93, 94); rudiments of hind wings much smaller than tegmina (Figs 93, 94). Legs with fore and middle femora lacking spines and denticles, with hind femora having 3–4 inner and 3–4 outer ventral spinules, with moderately long ventral spines of fore and middle tibiae, and with following armament of tibiae: di, d2a, v2, v2, v2, v2, v2a / di, de, di, d2, d2a, v2, v2, v2, v2, v2a / d11e-10i (d10e-9i), d2sa, 6a, ve, vi, ve, ve. Plate-like posterior lobes of ninth abdominal tergite distinctly developed but rather small, almost angular and very widely separated from each other (posterior edge of this tergite between these lobes almost straight); paraproctal process rather long, barely S-shaped in profile, and with slightly medially curved distal part (Figs 130, 132); genital plate with longer styles and rather large and roundly angular notch between them (Fig. 131).

Variations. Tibiae slightly darker; tegmina very light (almost transparent; Fig. 129); paraproctal processes completely yellowish.

Female unknown.

Length (mm). Body 26–28; pronotum 7.7–8; exposed part of tegmen 1–1.7; hind femur 21–22.

*Comparison.* In the structure of wings, the new species is most similar to *A. microp-*

*tera* but distinguished by a more uniformly light anterior surface of the epicranium (under rostrum), more uniformly coloured outer surface of the hind femur, longer head rostrum (for comparison see Figs 127 and 133), longer pronotum with more oblique posterior edges of the lateral lobes (see Figs 128 and 134), the presence of distinct longitudinal ridges on the posterior part of pronotal disc, and most convex longitudinal vein of tegmen situated near its costal edge (in median part in *A. microptera*; see Figs 88, 135 and 94, 129).

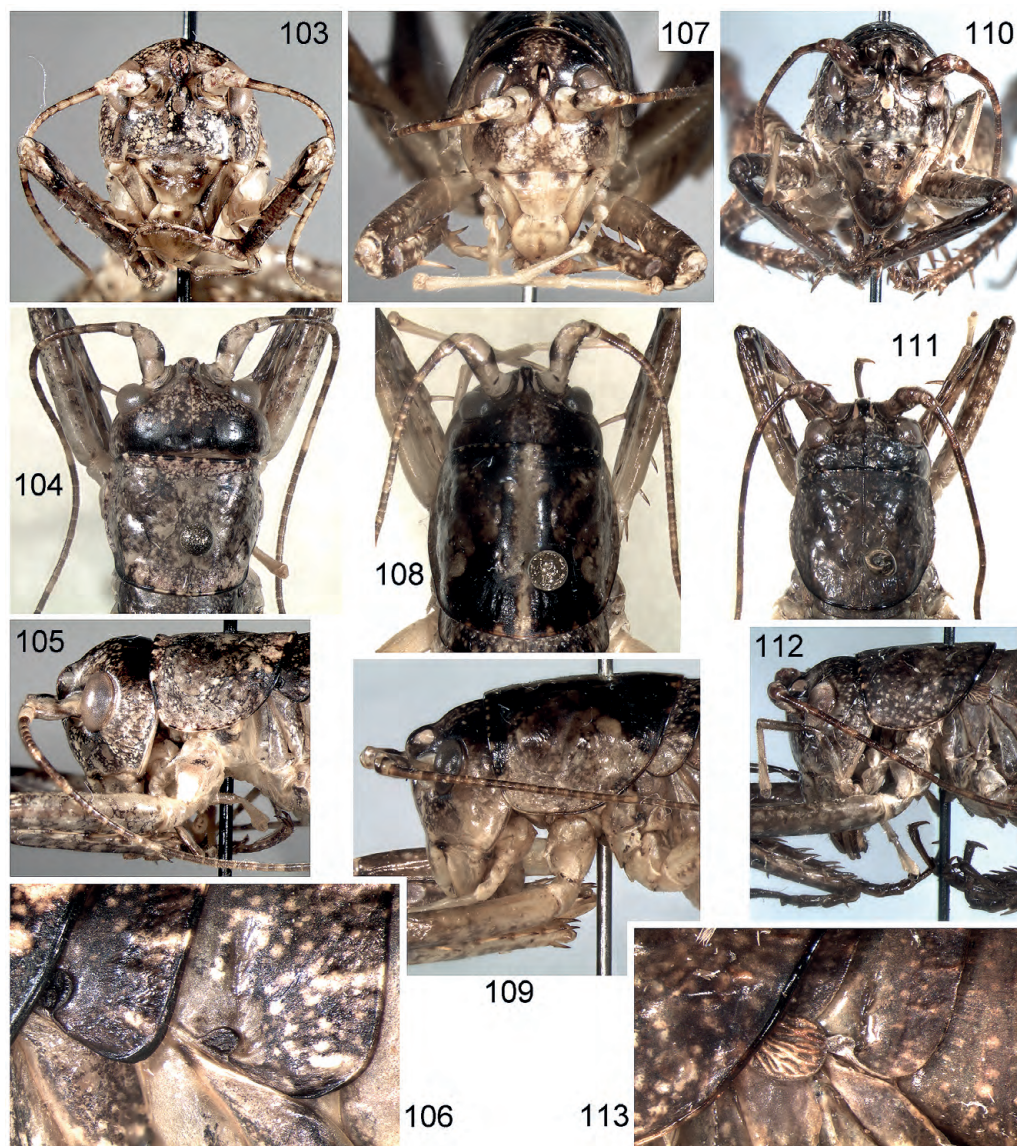
*Etymology.* The new species is named after its collector, hymenopterist D.R. Kasparyan.

***Anabropsis proxima*** Gorochov  
et Cadena-Castañeda, **sp. nov.**  
(Figs 90–92, 102, 110–113, 122, 123)

*Holotype.* Female, **Mexico**, Oaxaca State, “San. Marcos Arteaga”, 17°42.8'N, 97°53.2'W, 1667 m, 20.VIII.2011, V. Sinjaev (ZIN).

*Paratype.* **Mexico:** female, Guerrero, Tlalquetzala, 17°44'24.18"N, 98°29'15.78"W, 1752 m, J. Rincón (CAUD).

*Description.* Female (holotype). Body rather small for this genus. Colouration brownish grey with numerous whitish grey dots and small spots on epicranium, tergites and legs, with yellowish grey lower parts of body including clypeus, mandibles, maxillae, labrum, coxae and trochanters, with a few brown to dark brown spots on head as well as areas on legs near femur-tibia articulations, and with light brown to brown ovipositor (Figs 102, 110–113, 122, 123). Structure of body more or less similar to that of *A. microptera*: rostrum slightly shorter than in *A. kasparyani*, and scape almost 1.3 times as wide as space between antennal cavities (Fig. 110); pronotum almost intermediate in shape between these species (see Figs 87, 90, 93, 112, 128, 134) but with relief slightly more distinct than in *A. microptera*, similar to that of *A. kasparyani* (Figs 111, 112); relief of other tergites also more similar to that of *A. kasparyani*; thoracic sternites approximately as in these



**Figs 103–113.** *Anabropsis*: 103–106, *A. chiapas* sp. nov.; 107–109, *A. oaxaca* sp. nov.; 110–113, *A. proxima* sp. nov. Head in front (103, 107, 110); head with pronotum from above (104, 108, 111) and from side (105, 109, 112); lateral parts of pterothoracic tergites with rudiments of wings (106, 113).

species; tegmina more similar to those of *A. microptera* but barely shorter (not projecting behind lateral parts of mesonotum), more or less round and with somewhat reticular venation (majority of their veins and veinlets weakly convex; Figs 90, 91, 113); legs distinguished from those of *A. microptera* only by hind femora with two inner and

1–2 outer spinules on ventral keels as well as very small inner spinule at apex, and from those of *A. kasparyani* by slightly less numerous dorsal spines of hind tibiae (9 pairs); paraprocts short and approximately conical (with almost angular apex) in shape; genital plate and ovipositor similar to those of *A. microptera* but with distinctly longer api-

cal spine of this plate (see Figs 89, 125 and 92, 123) and with slightly narrower apical part of upper valves (see Figs 122 and 124).

Variations. Paratype slightly smaller and with general colouration light brown.

Male unknown.

Length (mm). Body 15–16.5; pronotum 4.8–5.1; exposed part of tegmen 0.9–1.1; hind femur 15.6–16.5; ovipositor 9.5–10.5.

*Comparison.* The new species is most similar to *A. microptera* and *A. kasparyani* in the tegminal structure, but it differs from the first species in more uniformly brownish grey hind femora (in *A. microptera*, these femora are almost yellowish with brown dorsal longitudinal stripe and dark brown outer median longitudinal stripe), shorter and almost round (not oblong-oval) tegminal rudiments, the presence of distinct spinules on the hind femur (in *A. microptera*, this femur is without denticles or spinules), the male genital plate with a longer apical spine, and the apex of ovipositor narrowly rounded (this apex in *A. microptera* is more widely rounded) (for comparison see Figs 89, 124, 125 and 92, 122, 123); from *A. kasparyani*, the new species differs in a distinctly smaller body, the same characters of head colouration and of rostrum structure as *A. microptera* (see the comparison for *A. kasparyani*), shorter pronotum and tegmina, and a more reticular tegminal venation.

*Etymology.* This species name is the Latin word “proxima” (nearest) given in connection with its similarity to *A. microptera*.

***Anabropsis johnsi*** Cadena-Castañeda et Gorochov, **sp. nov.**  
(Figs 95–97, 174–180)

*Holotype.* Female, **Guatemala**, Huehuetenango, Barillas Unión Las Palmas, “15.9311000 – 91.2993100”, 1444 m, 18–28.VII.2011, F. Camposeco, J. Monzón (CAUD).

*Description.* Female. Body medium-sized for this genus. Colouration of dorsal half of body brown with bluish tinge and numerous yellow dots on head and tergites (Figs

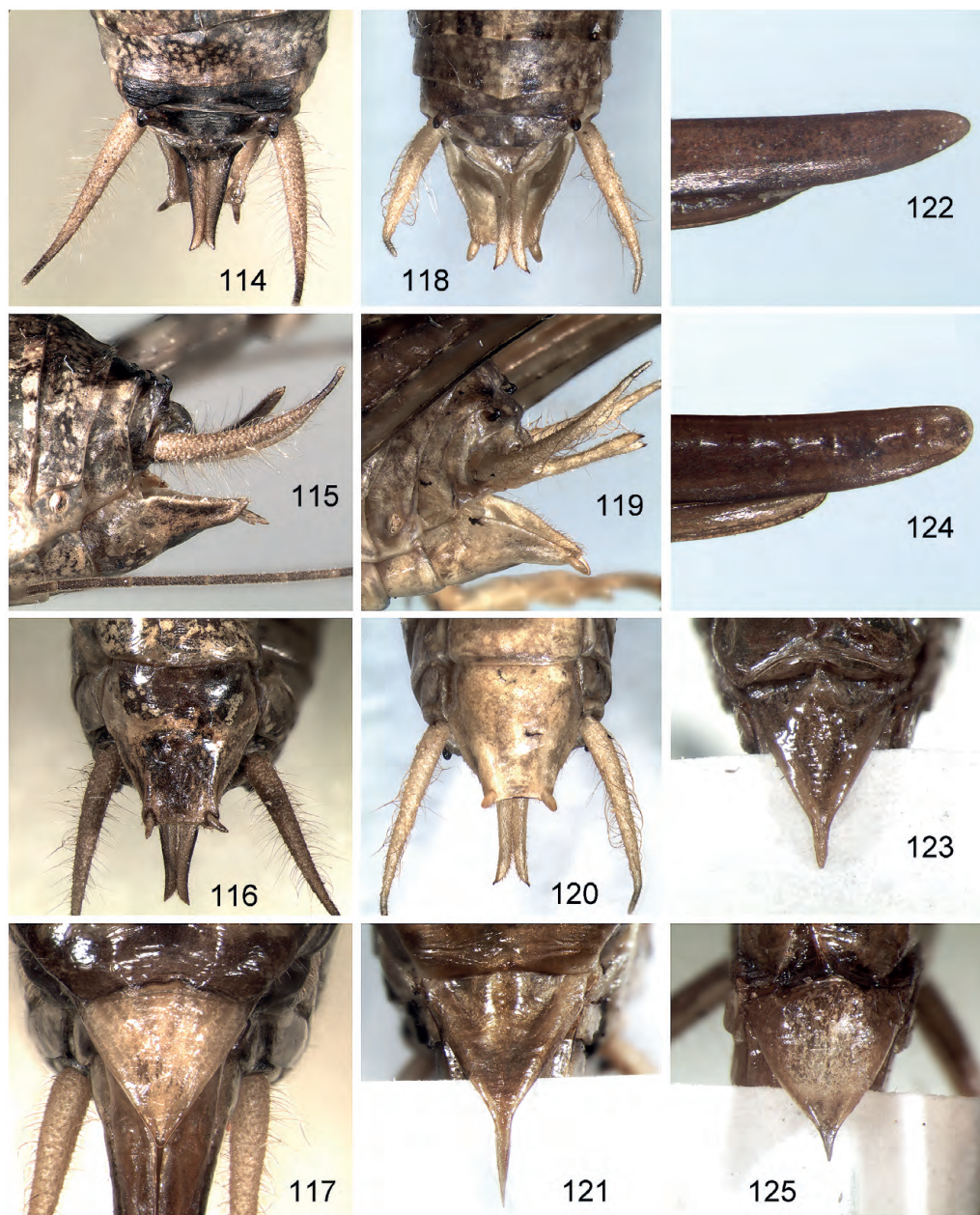
174–176); rest of body light brown, but two pairs of anterior legs also with yellow marks, hind legs with some brownish blue spots, femur-tibia articulations black, and ovipositor with brown distal half. Rostral tubercle as wide as half of scape (Fig. 174); lateral ocelli wider than long, central ocellus longer than wide. Pronotum elongate; its lateral lobes without humeral notches, with almost vertical anterior edge, and with very long and oblique hind edge (Figs 95, 175); pronotal disc with low median keel and a few low longitudinal ridges on posterior part of disc (Fig. 176); tergites with median keel and longitudinal ridges as in *A. kasparyani*. Tegmina significantly larger than in all other species of this group, ovoid, reaching middle part of first abdominal tergite but not protruding behind posterior edge of pronotum in rest condition, with most convex longitudinal vein located near (along) costal edge (Figs 95, 96, 175, 177); hind wings rudimentary, lying in nymphal position and completely covered by tegmina. Legs with fore and middle femora lacking spines and denticles, with hind femur having three inner and two outer spinules on ventral keels, and with very long dorsal and ventral spines on fore and middle tibiae (armament of all tibiae approximately as in *A. kasparyani*). Cerci as long as third of length of ovipositor (Fig. 178); genital plate with spine-like distal part somewhat longer or much longer than in *A. proxima* and *A. microptera*, and with wider base of this part than in *A. proxima* (Figs 97, 180); ovipositor (Fig. 178) comparatively shorter than in these species (as long as half of hind femur) and with distal part as in Fig. 179.

Male unknown.

Length in mm. Body 23; pronotum 8; exposed part of tegmina 3; hind femur 19; ovipositor 10.

*Comparison.* This new species is most similar to *A. kasparyani* in similar shape of pronotum and venation of tegmina, but it clearly differs from the latter species in a somewhat longer and more oblique posterior edge of the pronotal lateral lobes and





**Figs 114–125.** *Anabropsis*: 114–117, *A. chiapas* sp. nov.; 118–121, *A. oaxaca* sp. nov.; 122, 123, *A. proxima* sp. nov.; 124, 125, *A. microptera* Gor. Male abdominal apex from above (114, 118), from side (115, 119) and from below (116, 120); female genital plate from below (117, 121, 123, 125); apex of ovipositor from side (122, 124).

distinctly larger tegmina. From all the other species of Microptera Group, the new species is distinguished by a larger body, clearly longer pronotum, much larger tegmina, shorter ovipositor and the above-mentioned features of female genital plate.

**Etymology.** This species is dedicated to the orthopterist P.M. Johns, in recognition of his contribution to the research on Anostomatidae.

### Aptera Group

**Note.** This group is established by Cadena-Castañeda & Cortés-Torres (2013), but its volume is here corrected. This group contains several almost apterous congeners with only small rudiments of all their wings lying in nymphal position (costal edges of tegmina and of hind wings are directed more or less upwards, not downwards; Figs 137, 141, 145, 149) and usually covered with the hind pronotal lobe in rest condition: *Schoenobates apterus* Brunner-Wattenwyl, 1888 from Guatemala (Figs 50, 51, 144–147, 161–166); *Sch. saltator* Saussure et Pictet, 1897 from Costa Rica (Figs 152, 153); and three new species described here.

**Anabropsis chiapas** Gorochov et Cadena-Castañeda, **sp. nov.**  
(Figs 98, 99, 103–106, 114–117, 136–139)

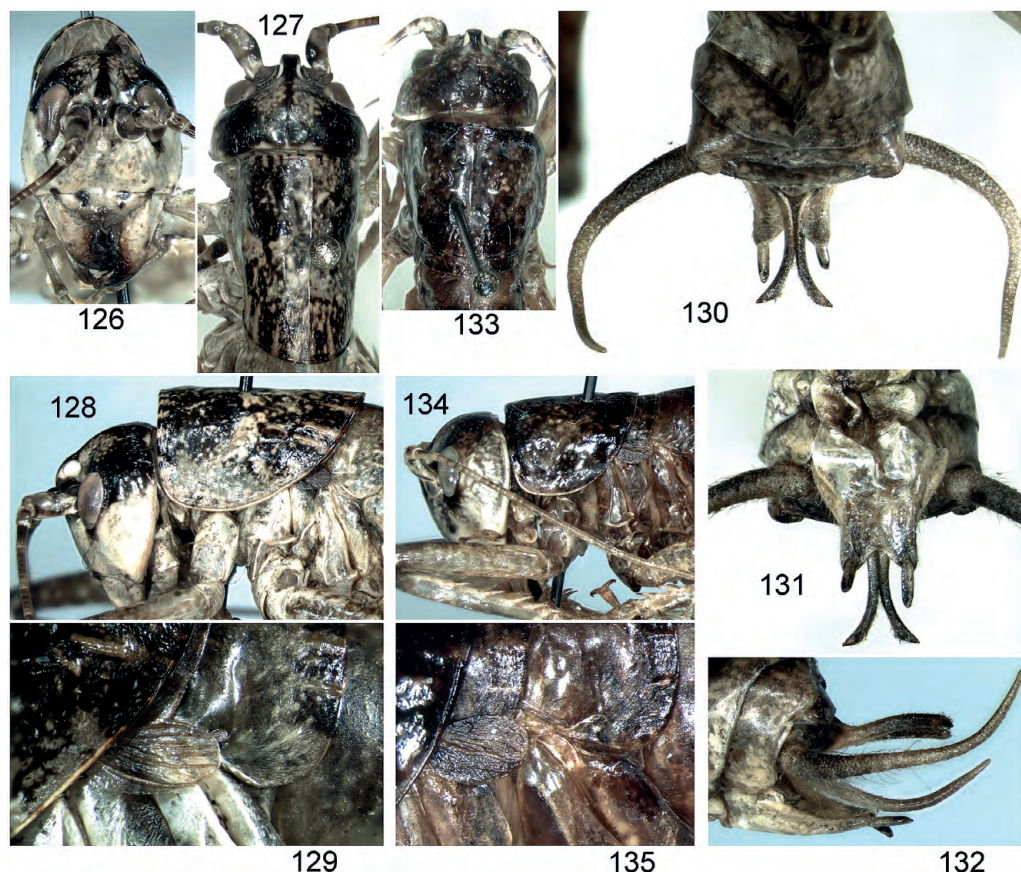
**Holotype.** Male, **Mexico**, Chiapas State, 130 km of Tapachula City, environs of Ejido Las Golondrinus Vill. near El Triunfo Reserve, 800–1000 m, 13–17.V.2006, A. Gorochov, M. Berezin (ZIN).

**Paratypes.** Male and 2 females, same data as for holotype (ZIN). **Guatemala:** 9 males and 4 females, San Marcos, Camino Fraternidad a Bojonal, latitude 14.9459, longitude 91.8806, 1600 m, 22.V.2012, J. Monzón, F. Camposeco (CAUD); 1 female, Baja Verapaz, Purulhá, Ranchitos del Quetzal, latitude 15.215747, longitude 90.219087, 1650 m, 1.VII.2012, J. Monzón (CAUD).

**Description.** Male (holotype). Body medium-sized for this genus. Colouration yellowish with epicranium, antennal flagellum and tergites brown but having very nu-

merous whitish dots and small spots as well as some other marks: posterior part of head dorsum dark brown; scape with a few darkened marks; pronotum with blackish and whitish spots along anterior and posterior edges; hind parts of meso- and metanotum with sparse longitudinal but short whitish stripes and dark areas between them; legs with numerous small darkish spots, and with larger dark spots near femur-tibia articulation (on inner surface in fore leg and on outer one in middle leg) as well as along median outer keel in hind femur; abdomen with dark brown dorsal part of ninth and tenth tergites as well as most part of epiproct and dorsolateral surfaces of paraproctal processes (Figs 98, 103–106, 114–116). Head with distinct low median keel on dorsum (similar median keel developed also on dorsum of all tergites excepting ninth and tenth abdominal ones, but pronotal disc with this keel less distinct); scape almost 1.5 times as wide as space between antennal cavities (Fig. 103); diameters of all ocelli almost equal to each other and slightly greater than those of proximal segments of antennal flagellum. Pronotum without distinct posterior lobe, i. e. humeral notches undeveloped, and posterior edge of lateral lobes weakly (vertically) oblique in upper half and roundly oblique in lower half (Figs 104, 105, 136); tergites of pterothorax as well as three anterior abdominal tergites with a few low and short longitudinal ridges; thoracic sternites similar to those of *A. kasparyani*, but a pair of angular ventral processes on mesothorax slightly longer and more acute angular than a pair of rather short and almost obtuse angular ventral projection on metathorax. Wings very strongly reduced (body practically apterous), but very small lobules (rudiments of wings) present on lateral edges of meso- and metanotum in nymphal position (tegmina rudiment somewhat larger than rudiment of hind wing; Figs 106, 137). Legs without denticles or spines on all femora and with armament of tibiae following: di, d2sa, v2, v2, v2, v2, v2a / di, de, di, d-2, d2sa, v2, v2, v2, v2, v2a / d7e-8i, d2sa, 6a,





**Figs 126–135.** *Anabropsis* (Microptera Group): 126–132, *A. kaspariyani* sp. nov., male; 133–135, *A. microptera* Gor., female. Head in front (126); head with pronotum from above (127, 133) and from side (128, 134); lateral parts of pterothoracic tergites with rudiments of wings (129, 135); abdominal apex from above (130), from below (131) and from side (132).

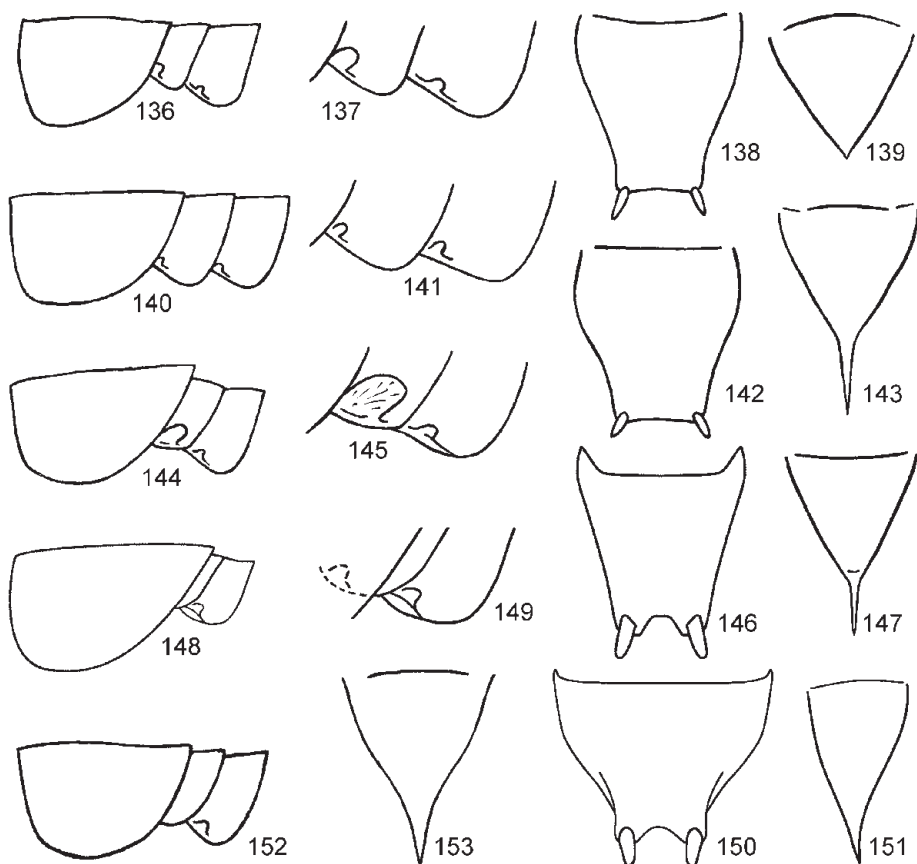
vi, ve, ve (dorsal and ventral spines of fore and middle tibiae moderately long; Fig. 98). Ninth abdominal tergite with a pair of short and rounded plate-like lobules situated rather far from each other; tenth abdominal tergite with a pair of small dorsal hooks located near above-mentioned lobules; each paraproct with long and thin posterior process slightly curved upwards and situated very near that of opposite paraproct and contacting with it by subapical part, with lateral surface almost shining, with rest part covered with numerous short hairs, and with apical part conical (almost acute; Figs 114–116); genital plate moderately long, with distal part narrowing to rather widely

truncate apex having a pair of very short rounded lateral lobules and a pair of moderately small styles on them (Figs 116, 138).

**Variations.** Other males sometimes with slightly wider (than in holotype) distal half of rostrum, with more distinct dark spots on dorsal surface of hind femora, with 1–2 inner ventral denticles on fore and middle femora, and with very small and almost hooked apical lobule on each paraproctal process.

**Female.** General appearance as in males, but legs often with 1–2 small denticles on outer ventral keels of hind femur, last abdominal tergites unspecialized, and paraproctal process much shorter (somewhat shorter than rest part of paraproct) and





**Figs 136–153.** *Anabropsis* (Aptera Group): 136–139, *A. chiapas* sp. nov.; 140–143, *A. oaxaca* sp. nov.; 144–147, *A. aptera* (Br.-W.); 148–151, *A. apteroides* sp. nov.; 152, 153, *A. saltator* (Sauss.). Pronotum with pterothoracic tergites exposed, lateral view (136, 140, 144); these tergites in rest condition (metathoracic tergite visible, but region of tegminal rudiments of mesothoracic tergite covered with pronotum), lateral view (148, 152); rudiments of tegmen and of hind wing (both in nymphal position) on lower parts of pterothoracic tergites (137, 141, 145, 149 – schematically); genital plate of male (138, 142, 146, 150) and of female (139, 143, 147, 151, 153) from below. [152, 153, after Gorochov (2001)].

straight as well as with narrowly rounded apex; genital plate practically triangular, weakly elongate, with almost straight lateral sides, and practically without apical spine (Figs 117, 139); ovipositor rather short (hind femur about 1.9 times as long as ovipositor) and with very narrowly rounded (almost acute) apical part (Fig. 99).

Length (mm). Body: male 20–25, female 22–24; pronotum: male 4.7–5, female 5–5.5; hind femur: male 16–17, female 16.5–18; ovipositor 8.5–9.5.

**Comparison.** The new species is most similar to *A. saltator*, but it differs from the latter in a more triangular shape of the female genital plate (i. e. apical part of this plate is spine-like in *A. saltator* and not spine-like in *A. chiapas*; for comparison see Figs 139 and 153). From *A. aptera*, the new species differs in a distinctly shorter pronotum with clearly less oblique posterior edges of the lateral lobes and without longitudinal ridges on the disc, and in distinctly smaller rudiments of tegmina (see Figs 137

and 145); and from Asiatic *Apteranabropsis cervicornis* (Karny, 1930) having similar condition of wing rudiments, in a distinctly smaller body size and the absence of any weak bifurcation at the apex of male paraproctal processes.

**Etymology.** This species is named after the Mexican state Chiapas where it was collected.

***Anabropsis oaxaca* Gorochov**

et Cadena-Castañeda, **sp. nov.**

(Figs 100, 101, 107–109, 118–121, 140–143)

**Holotype.** Male, **Mexico**, Oaxaca State, 35 km NNE of Santa Cruz Huatulco Town (10 km N of Xadani Vill.), 900–1000 m, 7–11.V.2006, A. Gorochov, M. Berezin (ZIN).

**Paratypes.** Two males and 4 females, same data as for holotype (ZIN); 1 female, same state of Mexico, San Mateo, near Cerro Copalita, 15°59'39.51''N, 96°21'16.14''W, 1340 m, J. Rincón (CAUD).

**Description.** Male (holotype). Size and structure of body very similar to those of *A. chiapas*, but colouration and some other features somewhat different: head and pronotum yellowish with dark brown areas on dorsal parts and diverse brown to light brown marks under these areas (including brown spots on scape and pedicel as well as more or less light brown antennal flagellum); other tergites light brown with yellowish, brown and dark brown spots (some light spots longitudinal, similar to those of *A. chiapas*), but ninth and tenth abdominal tergites rather light dorsally and with dark hooks of latter tergite only; rest of body yellowish with rather numerous small light brown marks on legs, brown outer and inner areas near femur-tibia articulation in fore and middle legs, and similar but dark brown areas in hind leg (most part of hind tibia almost completely light) (Figs 100, 107–109, 118–120); head rostrum almost twice narrower than in *A. chiapas* (for comparison see Figs 103 and 107); pronotum longer, practically without median keel and with slightly more oblique posterior

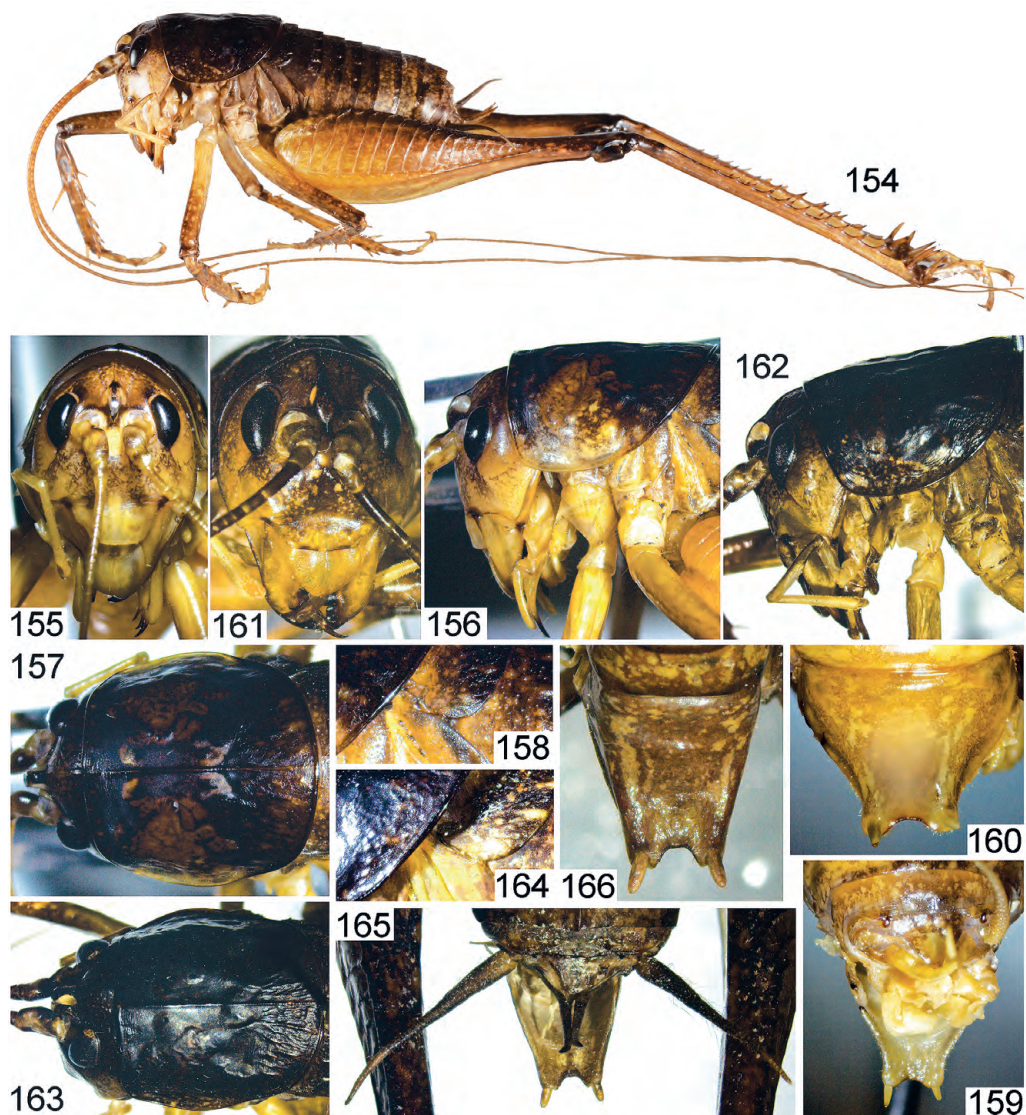
edges of lateral lobes (Figs 108, 109, 140); angular processes of metathoracic sternite slightly longer; tegminal rudiment smaller, approximately as large as rudiment of hind wing (Fig. 141); legs with one very small denticle on inner ventral keel of each fore femur as well as one outer and 4–5 inner very small denticles on ventral keels of hind femora; abdominal tergites with less distinct median keel and small longitudinal ridges, slightly angular posteromedian edge of eighth tergite, somewhat smaller lobules of ninth tergite, and different shape of hooks of tenth tergite (Figs 118, 119); paraproctal processes slightly longer, more straight in profile, almost completely contacting with each other, and having very small but distinct apical hooks (Figs 118–120); genital plate with slightly shorter styles (Figs 120, 142).

**Variations.** Dorsoapical part of hind femora sometimes lighter than in holotype, almost whitish; middle femora often with one very small denticle on outer ventral keel of middle femur; other femoral denticles slightly varied in number but also very small.

**Female.** General appearance as in males, but abdominal apex similar to that of female of *A. chiapas* and distinguished from it by clearly shorter (almost tubercle-like) paraproctal processes, presence of long apical spine in genital plate (Figs 121, 143), and slightly wider (higher) subapical part of ovipositor (hind femur about twice as long as ovipositor; Fig. 101).

**Length (mm).** Body: male 22–26, female 27–31; pronotum: male 5.5–7.5, female 6.7–7.8; hind femur: male 19–21, female 22–24; ovipositor 11–12.

**Comparison.** The new species is most similar to *A. aptera*, *A. saltator*, *A. chiapas* and *Apteranabropsis cervicornis* in the structure of wing rudiments, but it is distinguished from them by the following characters: from *A. aptera*, by a slightly shorter pronotum without distinct median keel on the disc and without longitudinal ridges on its posterior part, and by clearly smaller tegminal rudiments (see Figs 141



**Figs 154–166.** *Anabropsis* (Aptera Group), male: 154–160, *A. apteroides* sp. nov.; 161–166, *A. aptera* (Br.-W.). Body from side (154); head in front (155, 161); head and pronotum from side (156, 162) and from above (157, 163); visible part of metanotum (with rudiment of hind wing in nymphal position) in rest condition (158, 164); abdominal apex from above (159, 165); genital plate from below (160, 166).

and 145); from *A. saltator*, by a narrower and longer apical spine of the female genital plate as well as more slender and shorter ovipositor (in *A. saltator*, hind femur is about 1.6 times as long as ovipositor; in *A. oaxaca*, this ratio is about 2); from *A. chiapas*, by a very different shape of the fe-

male genital plate and some other features given above, in the *A. oaxaca* description; and from *A. cervicornis*, by the same characters as *A. chiapas*.

**Etymology.** This species is named after the Mexican state Oaxaca where it was collected.



***Anabropsis aptera***

(Brunner-Wattenwyl, 1888)

(Figs 50, 51, 144–147, 161–166, 182)

*Schoenobates apterus* Brunner-Wattenwyl, 1888

**New material. Mexico:** female, Chiapas State, 130 km of Tapachula City, environs of Ejido Las Golondrinas Vill. near El Triunfo Reserve, 800–1000 m, 13–17.V.2006, A. Gorochov, M. Berezin (ZIN). **Guatemala:** 2 males and 4 females, San Marcos, Camino Fraternidad a Bojonal, 1600 m, latitude 14.9459, longitude 91.8806, 22.V.2012, J. Monzón, F. Camposeco (CAUD); 8 males and female, Suchitepéquez, Santa Barbara Refugio del Quetzal, latitude 14.5417598494, longitude 91.1972949818, 1600 m, 11.V.2013, J. Monzón (CAUD).

**Note.** These specimens are practically identical to syntypes of this species, judging by the photographs of these syntypes presented in the Orthoptera Species File (Eades et al., 2016), but barely smaller. This species is described from Guatemala and recorded here from Mexico. It is characterized by the following characters: pronotum is rather long and almost uniformly dark (darker than majority of other body structures) with roundly oblique posterior edges of its lateral lobes and with a few distinct parallel longitudinal ridges on the posterior third of its disc; rudimentary wings are approximately as in *A. chiapas* and *A. oaxaca* in the structure, but tegminal rudiments (in nymphal position) are rather large (much larger than in these species; for comparison see Figs 137, 141, 145); cerci are clearly longer than the genital plate of both sexes; male paraproctal processes are as in Figs 165, 182; male genital plate has a rather deep and almost trapezoidal posteromedian notch (Figs 146, 166); female genital plate is with a very long apical spine (almost as in *A. oaxaca*; see Figs 143, 147); and ovipositor with narrowly rounded apical part.

Length in mm. Body; male 22–29.5, female 28–30; pronotum; male 7–9.5, female 8–10; hind femur: male 22–29, female 25–28; ovipositor 12–14.

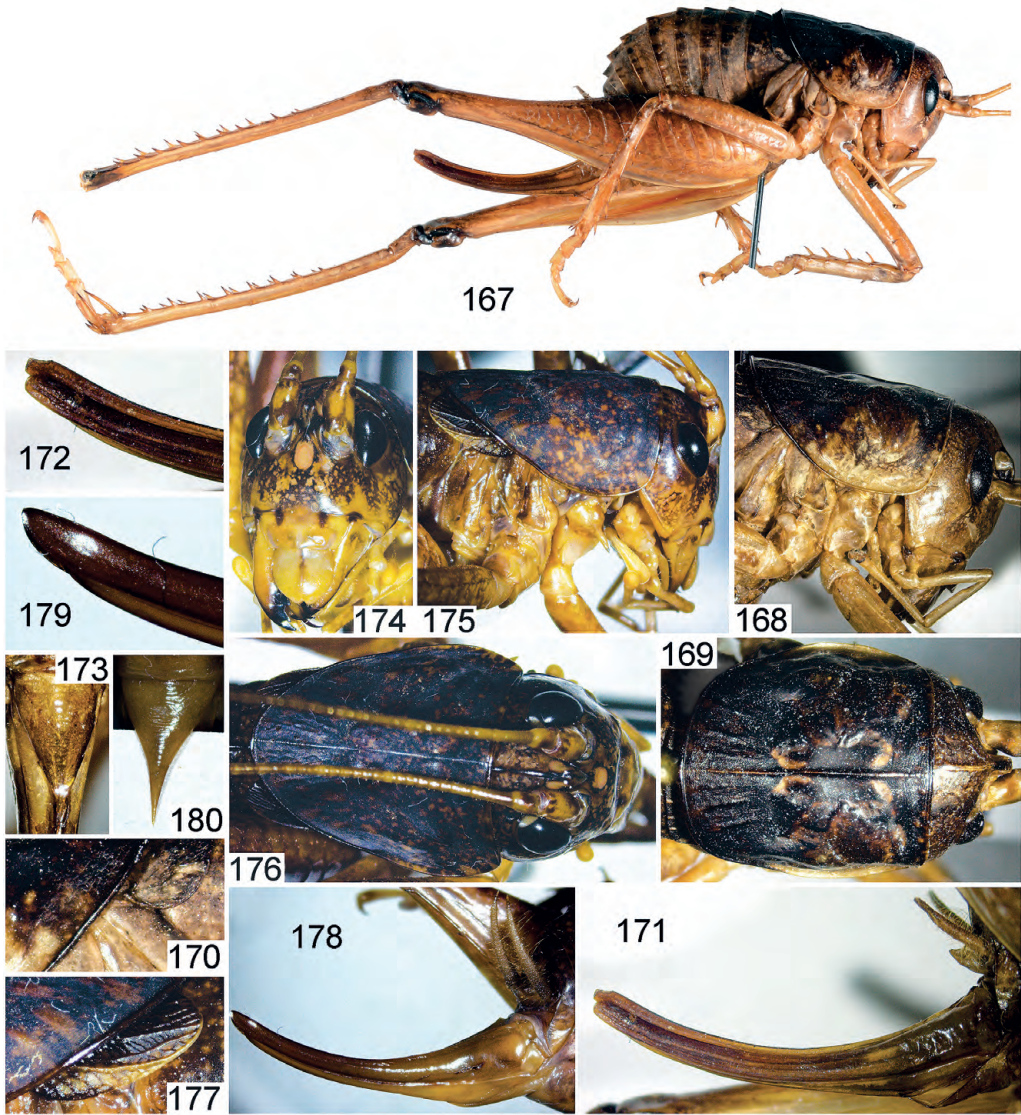
***Anabropsis apteroides*** Cadena-Castañeda et Gorochov, **sp. nov.**

(Figs 52, 53, 148–151, 154–160, 167–173, 181)

**Holotype.** Male, **Guatemala**, San Marcos, Camino Fraternidad a Bojonal, latitude 14.9459, longitude 91.8806, 1600 m, 22.V.2012, J. Monzón, F. Camposeco (CAUD).

**Paratypes.** Two males and 2 females, same data as for holotype (CAUD).

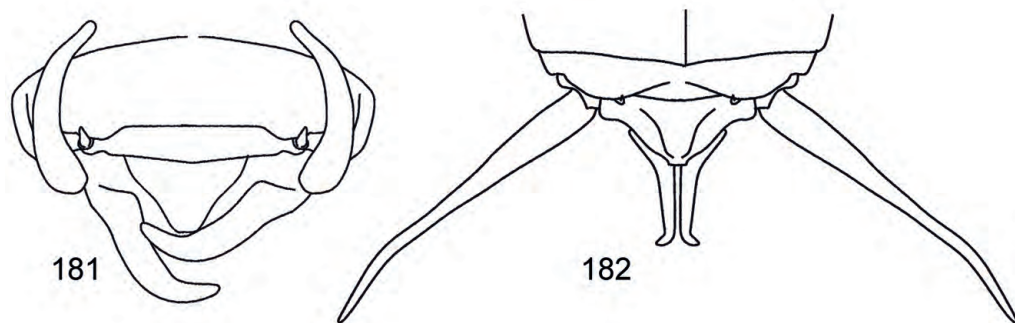
**Description.** Male (holotype). General appearance very similar to *A. aptera* (Fig. 154), but body smaller and colouration light brown with following marks: anterior part of head with some light grey diffused spots (Fig. 155); pronotum and posterior parts of other tergites dark brown, but pronotal disc with slightly lighter (brown) areas, and lower parts of pronotal lateral lobes yellowish brown (Fig. 156, 157); anterior and lower parts of abdominal tergites greyish brown with yellowish brown spots; legs with brown marks on fore and middle femora, and with dark brown spots on hind femur and basal part of hind tibia (Fig. 154). Head with rostral tubercle as wide as half of scape; lateral ocelli round and rather large but slightly smaller than median ocellus. Pronotum rather long (as in *A. aptera* and *A. oaxaca*), without humeral notch, with low but distinct median keel and with some low longitudinal ridges on posterior part of disc (almost as in *A. aptera*; Figs 148, 156, 157); other tergites also with median keel and longitudinal ridges and almost indistinguished from those of *A. aptera*. Tegminal rudiments approximately as small as rudiments of hind wings (much smaller than in *A. aptera* and lying in nymphal position; rudiments of hind wings also lying in nymphal position; Figs 148, 149, 158). Legs with fore and middle femora lacking denticles, with hind femur having only two small distal spinules, and with fore and middle tibiae having very long dorsal and ventral spines (armament of all tibiae following: di, d2sa, v2, v2, v2, v2, v2a / di, de, di, d2, d2sa, v2, v2, v2, v2, v2a / d9e-8i, d2sa, 6a, and three outer and one inner



**Figs 167–180.** *Anabropsis*, female: 167–173, *A. apteroides* sp. nov.; 174–180, *A. johnsi* sp. nov. Body from side (167); head and pronotum from side (168, 175) and from above (169, 176); visible part of metanotum (with rudiment of hind wing in nymphal position) (170) and of tegminal rudiment (in imaginal position) (177) in rest condition; ovipositor (171, 178) and its distal part (172, 179) from side; genital plate from below (173, 180); head in front (174).

ventral spinules of hind tibia). Posteromedian edge of ninth abdominal tergite almost straight; hooks of tenth abdominal tergite small and partially covered by small lateral lobules of ninth abdominal tergite (Figs 159, 181); paraproctal processes as long as three quarters of the total length of cerci,

and gradually curving inward from bases (these bases located rather far from each other; Fig. 181); cerci short, not protruding behind genital plate; genital plate similar to that of *A. aptera*, but with slightly less deep and more rounded posteromedian notch as well as with somewhat wider proximal part



**Figs 181, 182.** *Anabropsis* (Aptera Group) male: 181, *A. apteroides* sp. nov.; 182, *A. aptera* (Br.-W.). Abdominal apex from above (182), and from above and slightly behind (181).

of this plate (see Figs 146, 150, 160, 166); genitalia as in Figs 52, 53.

Variations. Other males slightly varied in size only.

Female. General appearance as in male (Figs 167–170), but ninth and tenth abdominal tergites unspecialized (i. e. without lobules and hooks), and paraproctal processes much shorter (somewhat shorter than rest part of paraproct) and straight (almost finger-like but with narrowly rounded apex); cerci somewhat shorter than genital plate; genital plate very elongate, gradually narrowing to long apical spine (Figs 151, 173); ovipositor as long as two thirds of hind femur (Fig. 171) and with distal part of upper valves narrow in profile and almost roundly truncate at apex (Fig. 172).

Length in mm. Body: male 22–24, female 24; pronotum: male 7–8, female 8–8.5; hind femur: male 18–19, female 22; ovipositor 10.

*Comparison.* The new species is most similar to *A. aptera*, but its body colouration is lighter, tegminal rudiments are much smaller, cerci are shorter, male paraproctal processes are rather different in the shape (for comparison see Figs 181 and 182), male genital plate is with a shallower and more rounded posteromedian notch (this notch is almost trapezoidal in *A. aptera*; see Figs 146, 150, 160, 166). From *A. oaxaca* and *A. chiapas*, the new species differs in the male genital plate with a distinct posteromedian notch; from only *A. oaxaca*, in the female genital plate more gradually narrow-

ing to the apical spine; and from *A. chiapas*, in clearly longer both pronotum and apical spine of the female genital plate.

*Etymology.* This species name refers to its similarity to *A. aptera*.

## SUBFAMILY INCERTAE SEDIS

### Tribe GLAPHYROSOMATINI

Rentz et Weissman, 1973

*Note.* The tribe Glaphyrosomatini Rentz et Weissman, 1973 was described for two genera: *Glaphyrosoma* Brunner-Wattenwyl, 1888 from Central America; *Cnemotettix* Caudell, 1916 distributed from Central America to southern part of USA. This tribe differs from majority of the other Anostomatidae groups in the absence of subapical spines on the dorsal surface of fore tibia and of a feather-like relief on the outer surface of hind femur. These features characterize also the New Zealand subfamily Deinacridinae Karny, 1932 and Afro-Asiatic subfamily Lezininae Karny, 1932 belonging to Anostomatidae, but such weak similarity may be a result of convergences. Moreover, male of *Glaphyrosoma* has the ninth abdominal tergite as in Anabropsini and Brachyporini (i. e. with a pair of posterior lobules widely separated from each other), but hooks of the tenth abdominal tergite are located very near each other (as in majority of the other Anostomatidae taxa). The presence of these intermediate characters in



Glaphyrosomatini supports the idea about convergent similarity of this tribe with Deinacridinae and Lezininae, but belonging of Glaphyrosomatini to Anabropsinae is also very problematic.

### Genus *Glaphyrosoma*

Brunner-Wattenwyl, 1888

*Mayacris* Cockerell, 1912

*Note.* At present this genus is not divided into species groups and includes the following species: *Daihinia mexicanus* Saussure, 1859 from Mexico (Figs 205–210); *G. gracile* Brunner-Wattenwyl, 1888 from Mexico (Figs 189–194, 256, 257); *Mayacris bruneri* Cockerell, 1912 from Guatemala (this species is very briefly discussed in the paragraph on the comparison of *G. bulbosum* **sp. nov.** with other congeners); and nine new species described below.

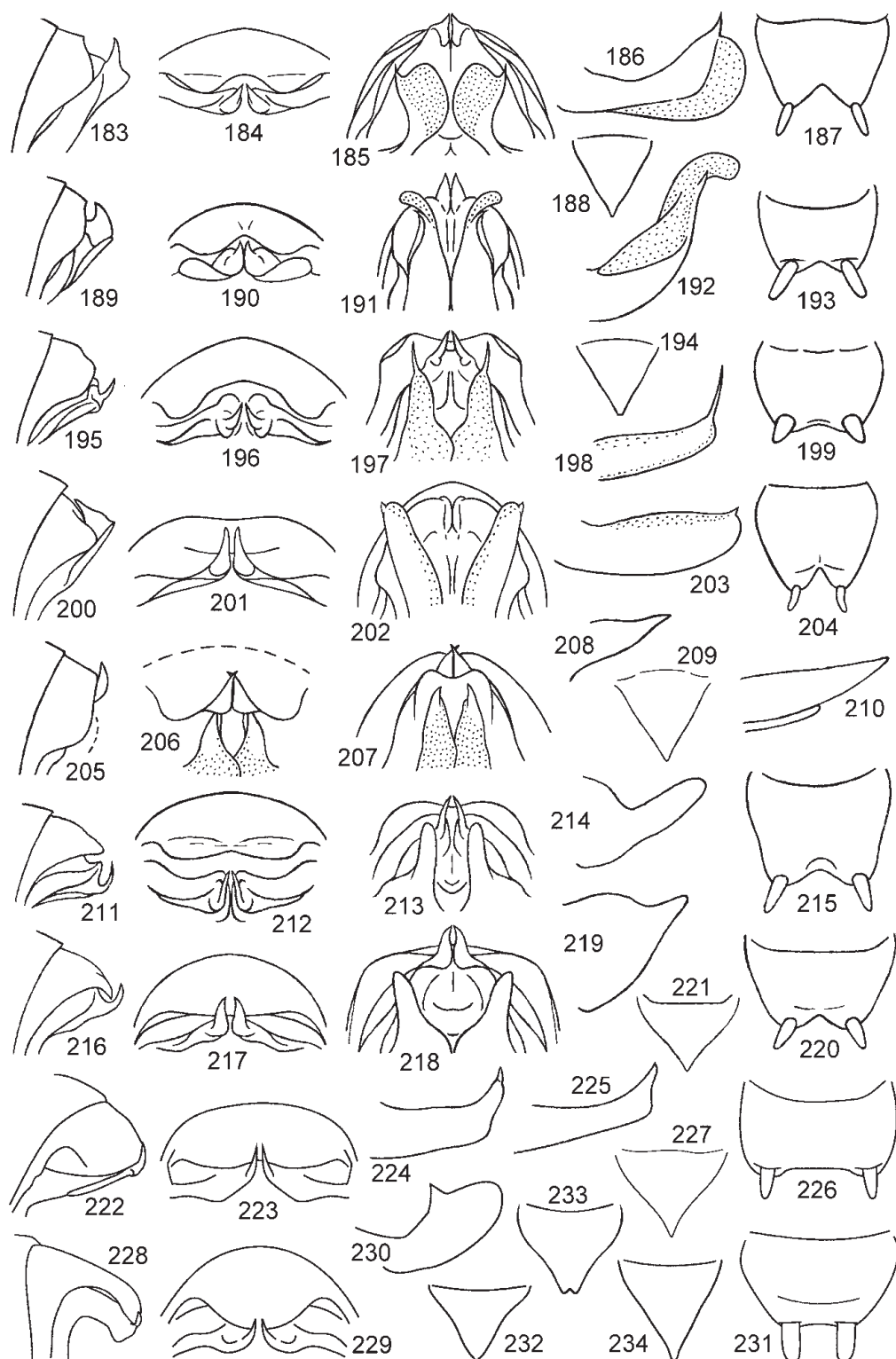
*Glaphyrosoma bulbosum* Gorochov  
et Cadena-Castañeda, **sp. nov.**  
(Figs 183–188, 235, 236, 244–248)

*Holotype.* Male, **Mexico**, Chiapas State, environs of Tuxtla Gutierrez City near El Ocote Biosphere Reserve (Ocozocuahtla Distr.), Laguna Belgica Educational Reserve, 600–1000 m, partly primary / partly secondary forest, on footpath at night, 19–24.V.2006, A. Gorochov, M. Berezin (ZIN).

*Paratypes.* Three males and 3 females, same data as for holotype (ZIN); male, same locality but 30–31.V.2007, M. Berezin, E. Tkatsheva (ZIN). **Guatemala:** male, Baja Verapaz, El Chol, 93 km from Puente el Astillero, 1008 m, 21.IX.1990, J. Pérez (UVGA).

*Description.* Male (holotype). Body rather large for this genus, shining, and relatively uniformly coloured: head and majority of tergites dark brown but with lower half of epicranium, most part of mouth-parts, scape, pedicel, ventrolateral parts of tergites from pronotum to subapical tergite, and apical (tenth abdominal) tergite light brown, as well as with all ocelli and all palpi yellowish; rest of body from light brown to yellowish, with somewhat darkened (almost brown) small areas near femur-tibia articulations as well as subapical third of hind femur (Figs 235, 236, 244–246). Head with rather short and wide rostrum; this rostrum with oblique and not sharp keels along ventrolateral edges only, and almost 1.5 times as wide as space between antennal cavities; latter space almost 1.5 times as wide as scape; ocelli round, almost equal to each other in size, and slightly wider than pedicel (Figs 235, 236). Pronotum tergite-like, somewhat elongate, semitubular, with almost straight anterior, posterior and ventral edges, and with rather low lateral lobes lacking humeral notches; pterothoracic tergites completely apterous, similar to pronotum but much shorter and with rounded ventral edges (Fig. 236); other tergites similar to latter ones but with less rounded ventral edges, a pair of posterior lobes on ninth abdominal tergite (these lobes rounded, rather short and widely separated from each other), and strongly specialized tenth abdominal tergite having a pair of conical hooks near each other (these hooks not very small, directed upwards-forwards and almost spine-like in distal part) and rather small median membranous area

**Figs 183–234.** *Glaphyrosoma*: 183–188, *G. bulbosum* **sp. nov.**; 189–194, *G. gracile* Br.-W.; 195–199, *G. beretka* **sp. nov.**; 200–204, *G. tamaulipas* **sp. nov.**; 205–210, *G. mexicanum* (Sauss.); 211–215, *G. dilutum* **sp. nov.**; 216–221, *G. dentatum* **sp. nov.**; 222–227, *G. karnyi* **sp. nov.**; 228–232, *G. anderi* **sp. nov.**; 233, *G. pushenkovi* **sp. nov.**; 234, *Glaphyrosoma* sp. Ninth and tenth abdominal tergites of male from side (183, 189, 195, 200, 205, 211, 216, 222, 228) and from behind (184, 190, 196, 201, 212, 217, 223, 229); same tergites with paraproctal processes from behind (206) and from below (185, 191, 197, 202, 207, 213, 218); male paraproctal process (186, 192, 198, 203, 224, 225, 230) and its distal part (208) from side; male paraproct from side (214, 219); genital plate of male (187, 193, 199, 204, 215, 220, 226, 231) and of female (188, 194, 209, 221, 227, 232–234) from below; distal part of ovipositor from side (210). [205–210, after photographs from Eades et al. (2016)].



(Figs 183–185, 244, 245). Legs moderately slender, but hind femora well thickened for jumps; femur with small inner apical spinule on middle and hind legs only; both tympana developed, oval, medium-sized; tibial armament – d2a, v2, v~2, v~2, v2, v2a / di, de, di, de, 2da, v~2, v~2, v~2, v2sa, v2a / d9e-8i (d9e-9i), d2sa, 6a. Epiproct medium-sized, roundly quadratic and with barely angular posterior (ventral) edge; each paraproct with large process moderately narrow in proximal half and strongly widened and inflates in distal half (distal part of paraproctal process with dorsal conical tubercle in subapical part and with short spine at apex of this tubercle; Figs 185, 186, 244–246); cerci thin and rather long, almost twice as long as paraproct; genital plate slightly transverse, somewhat narrowing to apex, with moderately short lateroapical styles, and with distinct angular posteromedian notch between them (Figs 187, 245, 246).

Variations. Some males with two thirds of outer surface of hind femur (excepting its light apical part) brown; 10<sup>th</sup> abdominal tergite sometimes somewhat darkened; number of dorsal spines on hind tibiae slightly varied.

Female. General appearance as in males, but subapical and apical tergites unspecialized (with almost straight posterior edges), epiproct somewhat smaller and roundly triangular, and paraprocts without processes; genital plate triangular but with barely sinuate lateral edges and acute-angled apical part (Fig. 188, 247); ovipositor slightly arcuate, not high, with narrowly rounded apical part, and with smooth dorsal and ventral edges (Fig. 248).

Length in mm. Body: male 22–29, female 27–30; pronotum: 6.5–8, female 7–8.5; hind femur: male 26–28, female 27–29; ovipositor 10–11.

**Comparison.** The new species is most similar to *G. gracile* Brunner-Wattenwyl, 1888 from Mexico but distinguished by strongly widened distal half of the male paraproctal process having a small dorsal spine in its subapical part. From *G. mexica-*

*num* (Saussure, 1859), the new species differs in a more uniform (not striped) body colouration as well as the above-mentioned characters of male paraproctal process; and from *G. bruneri* (Cockerell, 1913) from Guatemala, in a much longer ovipositor [in holotype of *G. bruneri*, ovipositor is “slightly over 4 mm in length” (Cockerell, 1913), but this female may be a nymph as its hind femur is only slightly shorter (22 mm) than in *G. bulbosum* (in this case, differences between these species are unclear, because nymphs of the similar congeners are practically not distinguished from each other)].

**Etymology.** This species name is the Latin word “bulbosum” (bulbous) indicating a widened and inflated distal half of the male paraproctal process.

### *Glaphyrosoma gracile*

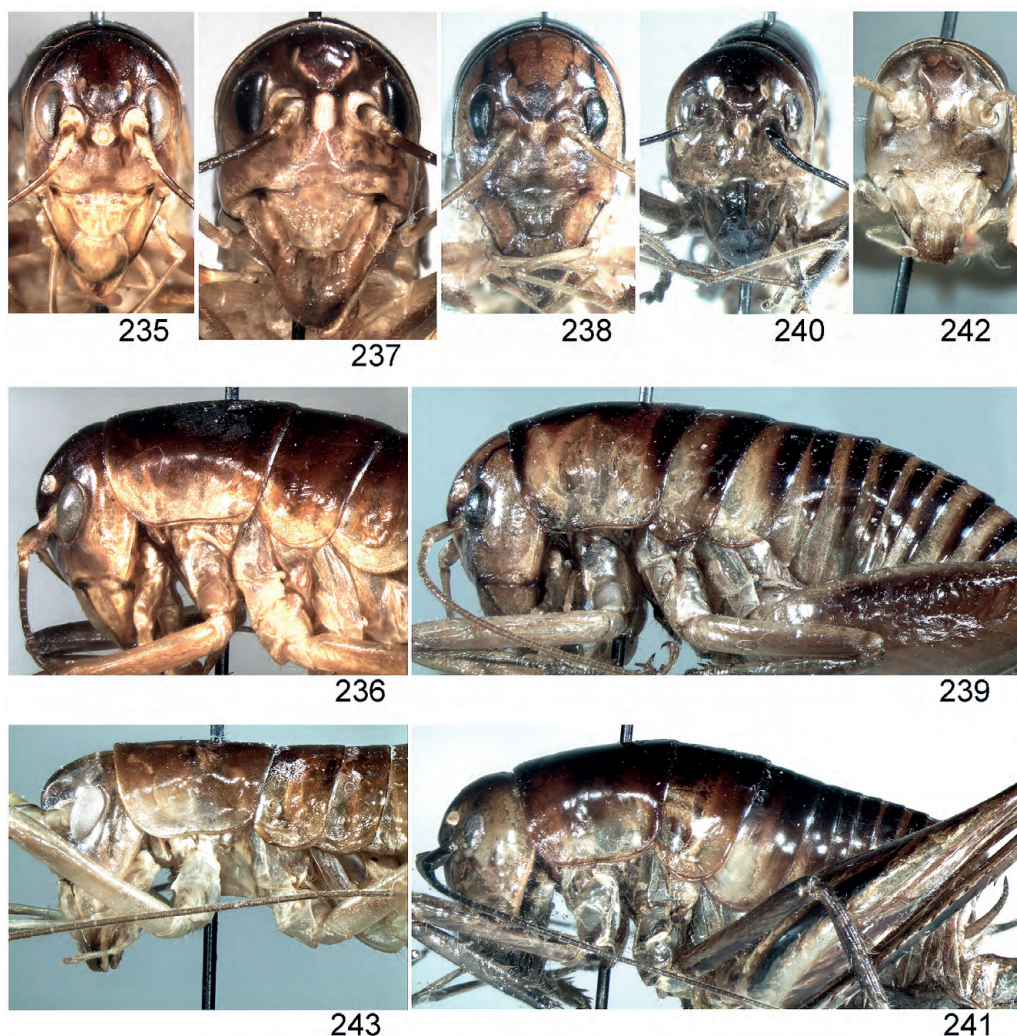
Brunner-Wattenwyl, 1888

(Figs 189–194, 256, 257)

**New material.** **Mexico:** 4 males and 4 females, Veracruz State, 15–20 km NE of Catemaco Town (2 km from Mexican Gulf), Los Tuxtlas (biostation of Mexico University), partly primary / partly secondary forest on hills, on footpath at night, 6–17.XI.2006, A. Gorochov, A. Ovtshinnikov (ZIN).

**Note.** This species was described from a series of syntypes from Mexico and Guatemala (Brunner-Wattenwyl, 1888). These specimens may belong to more than one species, and here, I designate a male (syntype) from Naturhistorisches Museum in Wien with the numbers “465” and “7170”, and with indication, that it is a “cotype” of this species collected in “Mexico Bilimek”, as a lectotype of *G. gracile*; the photographs of this male are in the Orthoptera Species File (Eades et al., 2015). The species examined is very similar to *G. bulbosum* in the size, colouration and body structure, but it differs from the latter in a very different shape of the male paraproctal process (it is longer, distinctly S-shaped in the profile, with a rather narrow and almost finger-like distal half, with clearly membranous lateral area, and with small ventrolateral spinule





**Figs 235–243.** *Glaphyrosoma*: 235, 236, *G. bulbosum* sp. nov.; 237, *G. beretka* sp. nov.; 238, 239, *G. tamaulipas* sp. nov.; 240, 241, *G. pushenkovi* sp. nov.; 242, 243, *G. dilutum* sp. nov. Head in front (235, 237, 238, 240, 242); head with thorax from side (236, 243); head with thorax and part of abdomen from side (239, 241).

located before the distal curvature); females of these species are almost indistinguishable from each other, but genital plate of *G. gracile* is with a barely wider apical part which is almost truncate or having a very small apical notch (Figs 194, 256).

Length in mm. Body: male 26–34, female 29–35; pronotum: male 7–8.5, female 7.5–9; hind femur: male 22–24, female 23–26; ovipositor 9.5–11.

***Glaphyrosoma beretka* Gorochov, sp. nov.** (Figs 195–199, 237, 249–251)

**Holotype.** Male, **Mexico**, “NE Chiapas”, Ocosingo Distr., Selva Lacandona between Montes Azules Biosphere Reserve and Bonampak Natural Monument (near Guatemala), environs of Lacanja-Chansayab Vill., primary forest, at night, 20–27.V.2007, M. Berezin, E. Tkatsheva (ZIN).

**Description.** Male (holotype). General appearance very similar to that of *G. bulbo-*

*sum* and *G. gracile*, but following differences present: head with narrow lighter (yellowish) borders around all ocelli and stripes along ventrolateral keels of rostrum (Fig. 237); colouration of hind femora approximately as in darker specimens of *G. bulbosum*; tenth abdominal tergite and paraprocts partly light and partly darkened; hooks of this tergite clearly thinner; paraproctal process almost as in *G. bulbosum* in length and distinctly shorter than in *G. gracile*, not S-shaped, not widened and not inflame in distal half, and with apical spine thin and much longer than in these species; genital plate with clearly shorter and thicker styles as well as with shallower and rounded posteromedian notch between them (Figs 195–199, 249–251).

Female unknown.

Length in mm. Body 32; pronotum 8.5; hind femur 27.

**Comparison.** The new species differs from *G. bulbosum* and *G. gracile* in the thinner hooks of 10<sup>th</sup> abdominal tergite and a long spine at the apex of male paraproctal process; from *G. bulbosum*, it differs also in a not widened distal half of this process; and from *G. gracile*, in this process shorter and not S-shaped in the profile. From *G. mexicanum*, the new species is distinguished by a darker and not transversally striped colouration, thinner hooks of the tenth abdominal tergite in male, and thinner and longer spine of the male paraproctal process directed clearly upwards (not backwards). Differences of *G. beretka* from *G. bruneri* is unclear (see the comparison for *G. bulbosum*).

**Etymology.** The species name is a family nickname of the collectors of this species: M.V. {Bere}zin & E.Ju. {Tka}tsheva.

***Glaphyrosoma tamaulipas* Gorochov et Cadena-Castañeda, sp. nov.**  
(Figs 200–204, 238, 239, 252–255)

**Holotype.** Male, **Mexico**, Tamaulipas State, Los Cedras, environs of Gomez Farias Town, Malaise trap, 23.VII.2002, S. Trjapitsyn (ZIN).

**Paratypes.** **Mexico**: 12 males, same state, Gómez Farías, Reserva de la Biosfera “El Cie-

lo”, 23°3′44.26″N, 99°9′32.55″W, 364 m, 12.IX.2015, O. Cadena-Castañeda (CAUD); 1 male, Los Troncones (near Cd. Victoria), 23°46′52.70″N, 99°11′59.67″W, 357 m, 12.III.2016, O. Cadena-Castañeda (CAUD).

**Description.** Male (holotype). Body medium-sized for this genus, shining and more or less transversally striped (Figs 238, 239): head light greyish brown with intensively brown area on rostrum, five narrow longitudinal brown to dark brown stripes on dorsum, and partly yellowish scapes, labrum and maxillae (their palpi as well as pedicel and ocelli completely yellowish); pronotum with dark brown disc and light brown lateral lobes (each lobe with dark brown stripe along anterior edge and with brown band along posterior edge); other tergites light brown with brown to dark brown band along most part of each posterior edge, but ninth abdominal tergite almost completely light brown, and last tergite with light brown lower parts and most part of hooks as well as with dark apices of these hooks and rest part of this tergite; rest of body yellowish with light brown to brown most part of outer surface of hind femur, dark brown small marks in region of femur-tibia articulation of hind leg, partly darkened spines and spurs of tibiae, light brown rest of hind tibia and proximal half of hind tarsus, slightly darkened distal parts of paraproctal processes and proximal parts of cerci, and almost blackish apical part of genital plate (including its styles). Structure of body similar to that of all congeners previously described here, but with following differences: hooks of last (tenth abdominal) tergite more similar to those of *G. bulbosum* and *G. gracile*, and somewhat thicker than in *G. beretka*; each paraproctal process almost finger-like (i. e. not inflated in distal half but slightly widened near middle in profile), more or less semisclerotized and completely covered with very short hairs, and with very small and almost apical sclerotized spinule; Figs 200–203, 252–255); genital plate also similar to that of *G. bulbosum* and *G. gracile*, and having styles longer and thinner than in *G. beretka* (Figs 204, 254).





**Figs 244–267.** *Glaphyrosoma*: 244–248, *G. bulbosum* sp. nov.; 249–251, *G. beretka* sp. nov.; 252–255, *G. tamaulipas* sp. nov.; 256, 257, *G. gracile* Br.-W.; 258, 259, *G. pushenkovi* sp. nov.; 260–262, *G. dilutum* sp. nov.; 263–267, *G. dentatum* sp. nov. Male abdominal apex from above (244, 249, 252), from side (245, 250, 253), from below (246, 251, 254, 262, 265), from behind (260, 263), and from side / below / behind (261, 264); female genital plate from below (247, 256, 258, 266); ovipositor from side (248, 257, 259, 267).



Variations. Colouration of some males slightly darker than in holotype or with more greyish tinge.

Female unknown.

Length in mm. Body 22–25; pronotum 6–7; hind femur 18.5–21.

*Comparison.* The new species is most similar to *G. mexicanum* in a transversally striped body colouration, but it is distinguished from the latter species by a dark apical part of the male genital plate as well as by almost finger-like and completely pubescent male paraproctal processes (in *G. mexicanum*, each paraproctal process is distally narrowing to rather large sclerotized tooth, which is acute-angled in ventral view; for comparison see Figs 202, 203 and 207, 208). From all the other known congeners excepting *G. bruneri* (see the comparison for *G. bulbosum* above), the new species differs in a transversally striped body as well as in the paraproctal process almost finger-like (i. e. not S-shaped and not strongly inflated distally) and having very small dorsoapical spinule.

*Etymology.* This new species is named after the Mexican state Tamaulipas.

*Remark.* This species may be determined by Barrientos-Lozano et al. (2013: p. 105) as *G. mexicanum* and mentioned by Fontana et al. (2008: p. 56–57, figs. 44–46) as *Glaphyrosoma* sp.

### *Glaphyrosoma mexicanum*

(Saussure, 1859)

(Figs 205–210)

*Daihinia mexicanus* Saussure, 1859

*Note.* This species was described from a series of syntypes from Mexico (Saussure, 1859; Eades et al., 2016). These syntypes may belong to more than one species, and one of these syntypes (male from Staatliches Museum für Naturkunde in Stuttgart marked as a “cotype” of this species and having the labels “DORSA SSglamexS01”, “Mexico u. Boleros”, “35” and “12”; Figs 205–208) is here designated as a lectotype of *G. mexicanum*; the photographs of this

male are in the Orthoptera Species File (Eades et al., 2016).

### *Glaphyrosoma pushenkovi*

Gorochov, **sp. nov.**

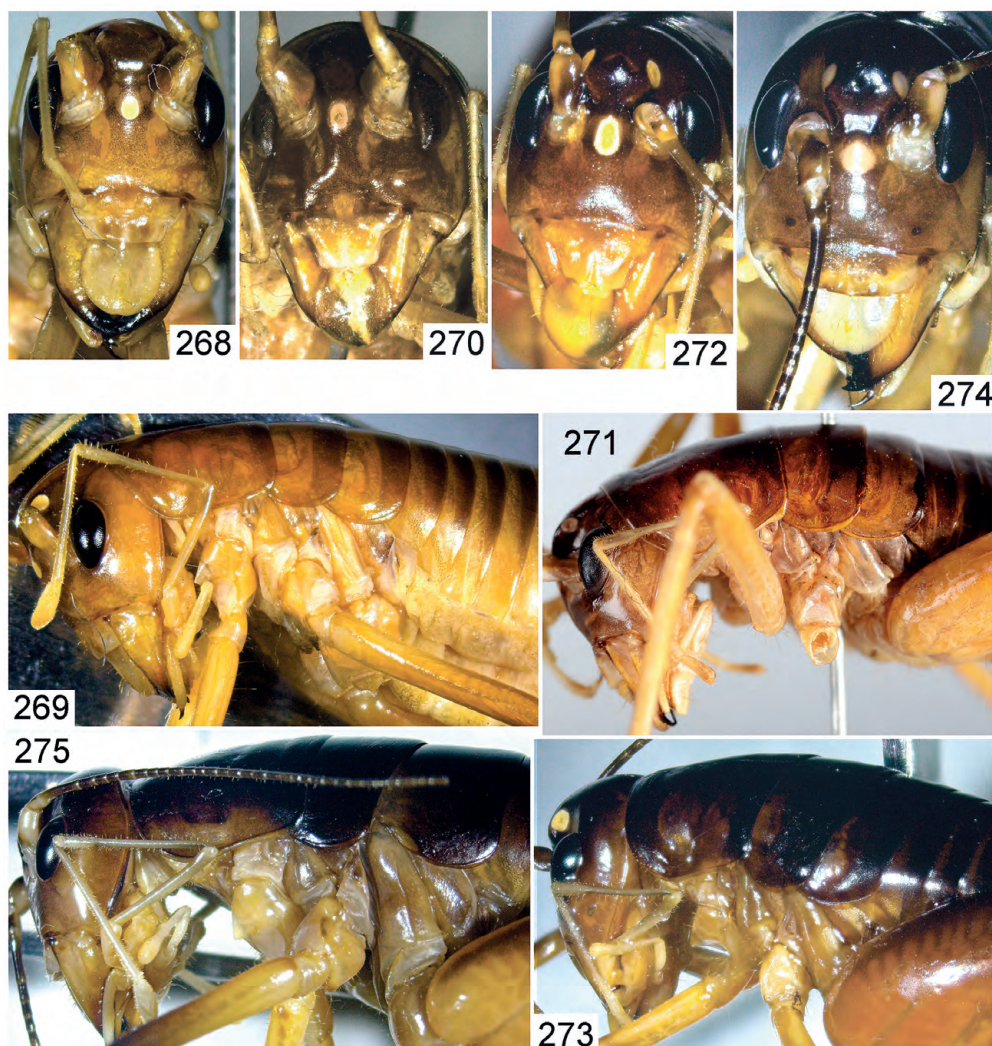
(Figs 233, 240, 241, 258, 259)

*Holotype.* Female, **Honduras**, “Lempira Town, Cerra Minas, Celaque National Park”, 14°33′46″N, 88°38′34″W, 1400 m, 1–6.VII. 2013, A. Pushenkov (ZIN).

*Paratype.* Deutonymph of male, same data as for holotype (ZIN).

*Description.* Female (holotype). Body rather small for this genus, shining and with partly uniform colouration (Figs 240, 241): head light greyish brown with dark brown dorsum (including rostrum), yellowish ocelli, greyish brown mouthparts (but maxillae and labrum light greyish brown), and brown antennae having partly light brown scapes and completely light brown pedicels; thoracic tergites (including pronotum) with dark brown disc, brown upper halves of lateral lobes and light brown lower halves of these lobes; abdominal tergites brown with wide dark brown bands along most part of posterior edges of first–eighth tergites (each band occupying most part of these tergites, and abdomen looking as more or less uniformly coloured), but last tergite light brown; epiproct, paraprocts and cerci also light brown but with darkened distal halves of cerci; rest of body from light brown to brown, but outer surface of hind femur with two dark brown median longitudinal stripes located very near each other in proximal half of femur, and ovipositor with partly dark ventral valves (however, latter darkening possibly not natural and present only in this dry specimen). Structure of body similar to that of *G. bulbosum* and *G. gracile*, but ovipositor much longer (hind femur 1.6 times as long as ovipositor), and genital plate shorter and with small (but larger than in *G. gracile*) notch at apex (Figs 233, 258, 259).

Deutonymph of male (adult male unknown). It more or less similar to holotype in general appearance, but: last abdominal



**Figs 268–275.** *Glaphyrosoma*: 268–271, *G. karnyi* sp. nov.; 272, 273, *G. anderi* sp. nov.; 274, 275, *Glaphyrosoma* sp. Head in front (268, 270, 272, 274); anterior half of body from side (269, 271, 273, 275).

tergite with dark median membranous area, and with a pair of small dorsal tubercles (rudiments of hooks) rather widely separated from each other; epiproct roundly triangular; each paraproct with very short finger-like apical process; genital plate more similar to that of *G. bulbosum*, *G. gracile* and *G. tamaulipas* than to that of *G. beretka*.

Length in mm. Body: male deutonymph 21, female 22; pronotum: male deutonymph 5, female 6.2; hind femur: male deutonymph 14, female 17; ovipositor 10.5.

*Comparison.* The new species differs from *G. bulbosum* and *G. gracile* in a much longer ovipositor and in a slightly shorter female genital plate having a distinct apical notch; from *G. beretka* and *G. tamaulipas*, in a smaller size and intermediate colouration of body (pterothorax and abdomen are less uniformly coloured than in *G. beretka* and less striped than in *G. tamaulipas*); and from *G. mexicanum*, in the same character of colouration as from *G. tamaulipas* and in the female genital plate with a distinct apical

notch. Differences of the new species from *G. bruneri*, excepting a smaller body size in *G. pushenkovi*, are unclear (see the comparison for *G. bulbosum*).

**Etymology.** The new species is named after its collector, entomologist A.A. Pushenkov.

***Glaphyrosoma dilutum* Gorochov, sp. nov.**  
(Figs 211–215, 242, 243, 260–262)

**Holotype.** Male, **Mexico**, Chiapas State, environs of Tuxtla Gutierrez City near El Ocote Biosphere Reserve (Ocozocuahtla Distr.), Laguna Belgica Educational Reserve, 600–1000 m, partly primary / partly secondary forest, on footpath at night, 19–24.V.2006, A. Gorochov, M. Berezin (ZIN).

**Paratypes.** Two males, same data as for holotype (ZIN).

**Description.** Male (holotype). Body rather small for this genus, shining, and almost uniformly light: general colouration yellowish with light brown head and tergites, but head dorsum (including rostrum and pronotal disc) barely darker, and mouthparts (excepting labrum and distal parts of mandibles) as well as proximal parts of antennae, ocelli, and lower parts of pronotal lobes yellowish; hind leg with small brown marks in region of femur-tibia articulation and with partly darkened spines and spurs of tibia; hooks of last (tenth abdominal) tergite brown (Figs 242, 243, 260–262). Structure of body distinguished from that of all species previously described here by following characters: scape distinctly larger, almost equal to space between antennal cavities in width; ventrolateral keels of head rostrum somewhat more sharp; eyes larger (higher), almost 1.5 times as high as space between eye and subgena (in previous species, this space more or less equal to eye in height); pronotal lateral lobes somewhat lower (Fig. 243); legs with barely more numerous dorsal spines (ten inner and 10–11 outer) in hind tibiae; last tergite with very thin (almost spine-like) but somewhat more curved hooks (Figs 211–213, 260, 261); epiproct smaller and almost round;

paraproctal processes not very long, finger-like (rounded at apex) and without hooks, spines or denticles (Figs 213, 214, 260, 261); genital plate with distal part more or less intermediate between those of *G. bulbosum* and *G. gracile* (Figs 215, 262).

**Variations.** Sometimes, rostrum of head and base of hind tibia almost greyish brown; number of dorsal spines on hind tibiae slightly varied.

Female unknown.

Length in mm. Body 22–24; pronotum 5.9–6.3; hind femur 18–19.

**Comparison.** The new species is clearly distinguished from the other congeners in a smaller body size in combination with an almost uniformly light colouration, larger scapes and eyes, almost spine-like hooks of the male last tergite, and finger-like male paraproctal processes lacking denticles, spines or hooks.

**Etymology.** This species name is the Latin word “*dilutum*” (diluted) given in connection with the light body colouration.

### ***Glaphyrosoma dentatum***

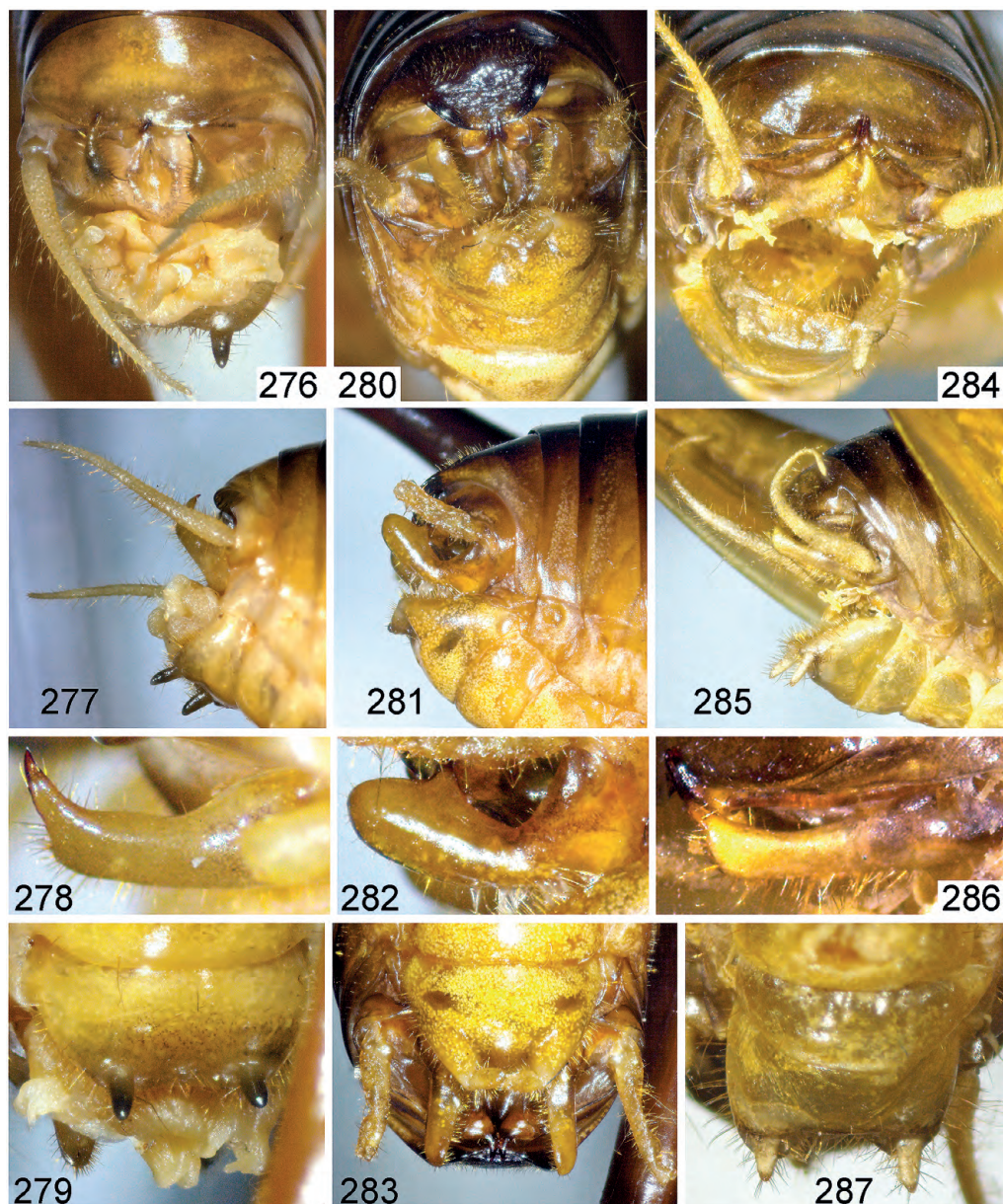
Gorochov, sp. nov.  
(Figs 216–221, 263–267)

**Holotype.** Male, **Mexico**, Chiapas State, environs of Tuxtla Gutierrez City near El Ocote Biosphere Reserve (Ocozocuahtla Distr.), Laguna Belgica Educational Reserve, 600–1000 m, partly primary / partly secondary forest, on footpath at night, 19–24.V.2006, A. Gorochov, M. Berezin (ZIN).

**Paratype.** Female, same data as for holotype (ZIN).

**Description.** Male (holotype). General appearance very similar to that of *G. dilutum*. However, body slightly smaller, and colouration as in holotype of this species but with distinct greyish tinge. Structure of body with following differences from *G. dilutum*: ninth abdominal tergite with posterior lobes fused with each other and forming one short and truncately convex fold; hooks of last tergite clearly thicker and somewhat shorter than in this species (Figs 216–218, 263, 264); paraproctal processes almost





**Figs 276–287.** *Glaphyrosoma*, male: 276–279, *G. karnyi* sp. nov.; 280–283, *G. anderi* sp. nov.; 284–287, *G. karnyi*. Abdominal apex from behind (276, 280, 284), from side (277, 281, 285) and from below (279, 283, 287); right paraproctal process from side (278, 282, 286).

twice shorter than those of *G. dilutum*, and more or less conical in shape (Figs 218, 219, 263, 264); genital plate with slightly shorter styles (Figs 220, 265).

**Female.** Size, colouration and external structure of body similar to those of male,

but apex of rostrum slightly darker (almost greyish brown), number of dorsal spines on one of hind tibiae slightly less numerous (8–9), and abdominal apex similar to that of females of *G. bulbosum* and *G. gracile* but distinguished by following features: ovipositor

distinctly higher (especially in distal half) and having very distinct denticles on dorsal edge (Fig. 267); genital plate slightly shorter (wider) than in these species (its apical part angular, not notched; Figs 221, 266).

Length in mm. Body: male 19.5, female 19; pronotum: male 5.2, female 5.4; hind femur: male 16.8, female 17; ovipositor 6.9.

**Comparison.** Differences from the most similar species *G. dilutum* are listed above, in the description of *G. dentatum*. From all the other congeners, the new species differs in the same characters as *G. dilutum* as well as in a shorter female genital plate, lacking apical notch, and distinctly denticulate ovipositor.

**Etymology.** This species name is the Latin word “dentatum” (with teeth) given in connection with the ovipositor structure.

***Glaphyrosoma karnyi* Cadena-Castañeda et Gorochov, sp. nov.**

(Figs 222–227, 268–271, 276–279, 284–287, 288–293)

**Holotype.** Male, **Guatemala**, Alta Verapaz, Chelemhá, latitude 15.38590, longitude 90.06254, 2050 m, cloud forest edge, 12.IX.2014, K. Eisermann (CAUD).

**Paratypes.** **Guatemala:** female, same data as for holotype; male, Suchitepéquez, Santa Bárbara Refugio del Quetzal, 1600 m, 11.V.2013, J. Monzón, F. Camposeco (CAUD); female, Escuintla Volcan Pacaya, I.1978, M. Vean (UVGA); male, Baja Verapaz, El Chol, 93 km from Puente el Astillero, 1008 m, 28.IX.1990, O. Melchor (UVGA); female, Zacapa, Sierra de las Minas, 30.V.1994, A. del Valle (UVGA); female, Guatemala, Reserve of Guatemala University (zone 15) near Guatemala City, 27.V.1989, N. Monzón (UVGA).

**Description.** Male (holotype). General colouration more or less similar to *G. dentatum* and *G. dilutum*: light brown with umber tinge, but head rostrum (Fig. 268), posterior edges of pro-, meso- and metanotum as well as of abdominal tergites brown (Fig. 269), fore leg, base of middle femur, middle and hind tibiae light ocher. External structure of body with following characteristic features: ninth abdominal tergite with unpaired short

and widely rounded posterior lobe weakly projected backwards; tenth abdominal tergite with hooks rather thin and situated in shallow posteromedian concavity of above-mentioned lobe (Figs 222, 223, 276, 277); epiproct wide, with apex rounded and with dorsal surface having oval concavity; paraproctal processes more or less cylindrical, without any widening near their middle part, with dorsoapical spine intermediate in size between that of *G. tamaulipas* and that of *G. beretka*, and with ventroapical part almost truncate (Figs 224, 278); genital plate rectangular, with medium-sized styles and almost straight posterior edge between them (Fig. 226, 279). Genitalia as in Figs 288, 289.

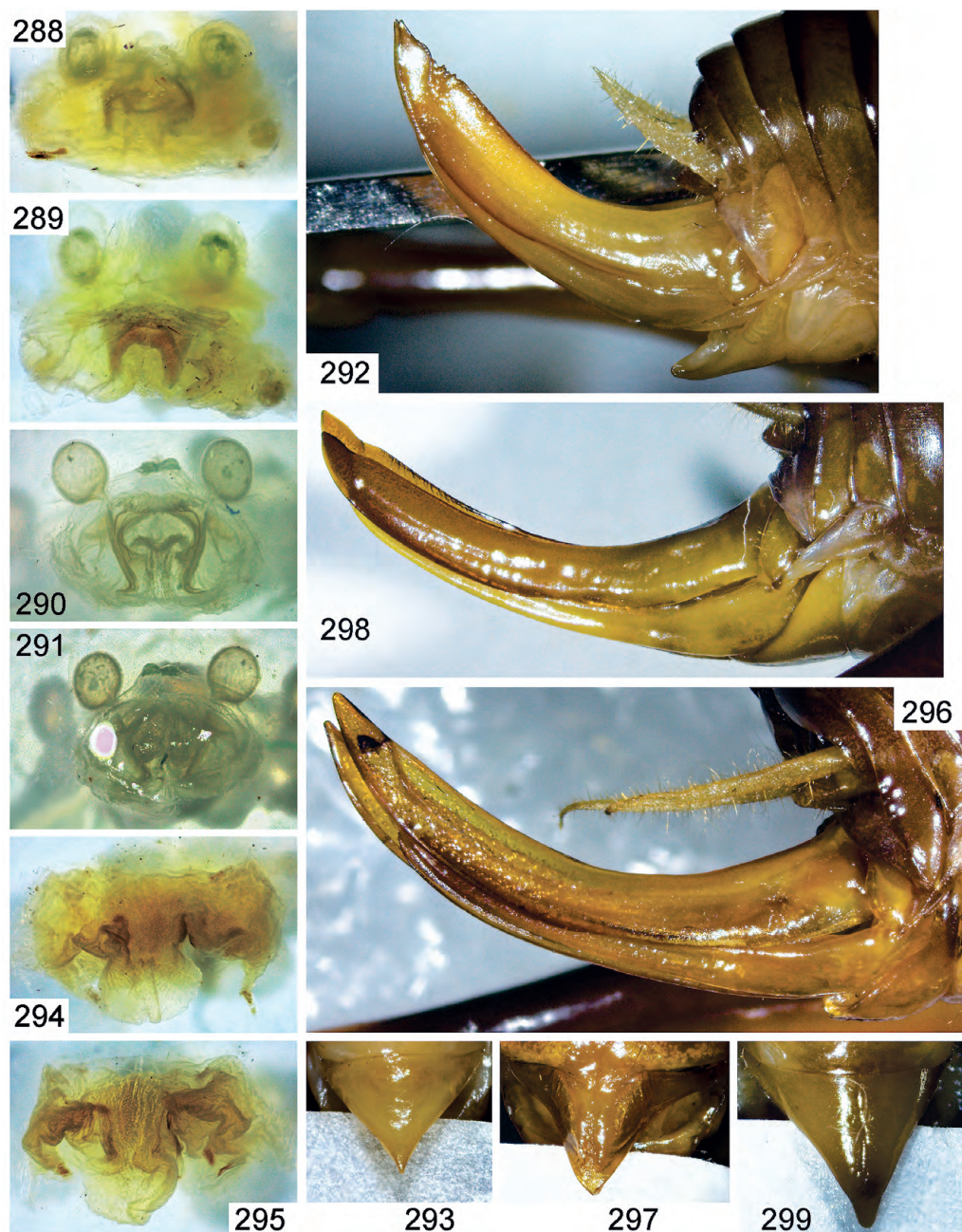
**Variations.** Other males insignificantly varied in size and colouration (Figs 270, 271), in shape of ninth abdominal tergite and paraproctal processes, and in structure of genital plate and genitalia (Figs 225, 284–287, 290, 291).

**Female.** General appearance as in male, but abdominal tergites unspecialized and cerci slightly shorter (almost as long as third of ovipositor). Ovipositor similar to that of *G. dentatum* but barely longer and with distinctly less numerous denticles on dorsal edge of distal portion (Fig. 292); genital plate somewhat wider than long and with short apical spine (Figs 227, 293).

Length in mm. Body: male 15–20, female 15.5–21; pronotum: male 5–5.5, female 5.5–6; hind femur: male 14–16.5, female 15–17; ovipositor 7–8.

**Comparison.** This species is similar to *G. dentatum* in the body colouration and structure of ovipositor, but it differs from the latter species in the male paraproctal process much longer and having a dorsoapical hook-like spine (*vs.* without any spine or denticle), male genital plate without any posteromedian notch, and ovipositor with distinctly less numerous denticles on its dorsal edge (for comparison see Figs 219, 220, 224, 225, 226). From *G. dilutum* also similar to *G. karnyi* in the colouration, the latter is distinguished by the same characters of paraprocts and genital plate as from *G. den-*





**Figs 288–299.** *Glaphyrosoma*: 288–293, *G. karnyi* sp. nov.; 294–297, *G. anderi* sp. nov.; 298, 299, *Glaphyrosoma* sp. Male genitalia in ventral view (288, 290, 294) and in dorsal view (289, 291, 295); ovipositor from side (292, 296, 298); female genital plate from below (293, 297, 299).



*tatum* (however, difference between these species in the length of male paraproctal processes is smaller; see Figs 214, 224, 225). From the other congeners (excepting *G. bruneri* described probably from a nymph), the new species differs in a clearly lighter colouration, the male paraproctal process with a medium-sized dorsoapical spine (not very long, not very short, rather thin and directed more or less upwards) and without distal inflation or S-shaped curvature, male genital plate without posteromedian notch, ovipositor denticulate, and female genital plate with an acute apical spine (the latter character allows us to distinguish this species mainly from *G. pushenkovi*).

**Etymology.** This species is named in memory of orthopterist H.H. Karny, in recognition of his contribution to the taxonomy of Tettigonioidea, Stenopelmatoidea and other groups of Orthoptera.

***Glaphyrosoma anderi*** Cadena-Castañeda et Gorochov, **sp. nov.**  
(Figs 228–232, 272, 273, 280–283, 294–297)

**Holotype.** Male, **Guatemala**, Alta Verapaz, Chelemhá, Cloud forest edge, latitude 15.38590, longitude 90.06254, 2050 m, 12.IX.2014, K. Eissermann (CAUD).

**Paratypes.** **Guatemala:** female, same data as for holotype (CAUD); 2 females, Huehuetenango, Laguna Maxbal, 1300 m, cloud forest, 27.VII.2000, E. Cano (UVGA).

**Description.** Male (holotype). General appearance more or less similar to that of *G. beretka* and *G. bulbosum*: general colouration dark brown; ocelli yellowish white; lower part of head and partly scape from light brown to yellowish (Fig. 272); legs, lower part of body and lateral parts of posterior half of abdomen also light brown but with somewhat darker (almost brown) distal half of fore and middle femora, most part of hind femur and of all tibiae (but distal part of these tibiae lighter) (Figs 273, 280–283); ninth abdominal tergite with posterior edge projected in shape of rather long rounded lobe directed more or less downwards (Figs

228, 229, 280); hooks of tenth abdominal tergite rather thin but not long and partly covered with above-mentioned lobe (Figs 228, 229, 280); epiproct longer than wide, with apex rounded, and with median groove running from base to apex; paraproctal processes comparatively short (but clearly longer than in *G. dentatum*), with somewhat widened (ovoid) inflation in distal half (but this inflation distinctly less spherical than in *G. bulbosum*), and with strong dorsal spine situated approximately in middle part of this inflation and directed more or less upwards (Figs 230, 281, 282); cerci rather short; genital plate with styles rather thick and situated less far from each other than in other congeners with known males, and with posterior edge between these styles almost straight (Figs 231, 283). Genitalia as in Figs 294, 295.

**Female.** General appearance almost as in male, but body dark brown with proximal half and distal part of hind femur (except genicular lobes) light brown, lower portion of lateral lobes of pronotum from brown to dark brown, cerci longer (as long as half of ovipositor), and epiproct almost as long as wide; ovipositor umber, as long as half of hind femur, with upper valve having longitudinal lateral depression near upper edge from base to apical portion (Fig. 296); genital plate triangular, slightly wider than long, with apical part more angular (not spine-like as in *G. karnyi*; Figs 232, 297).

Length in mm. Body: male 18, female 20; pronotum: male 6, female 7.2; hind femur: male 17, female 19; ovipositor 9.

**Comparison.** The new species is similar to *G. gracile*, *G. bulbosum* and *G. beretka* in a more or less dark body colouration, but it differs from them in the following features: ninth abdominal tergite in male is with a longer and rounded posteromedian lobe directed partly downwards and undivided into two lobes; male paraproctal process is not S-shaped, with somewhat widened (ovoid in profile) distal half clearly less inflated than in *G. bulbosum*, and with strong dorsal spine located in the middle part of

this half and directed more or less upwards (for comparison see Figs 186, 192, 198, 230); male genital plate has a shorter space between styles; and female genital plate is with angular (not almost spine-like, narrowly truncated or notched) apical part (see Figs 188, 194, 232). The latter character distinguishes the new species also from *G. pushenkovi*. From *G. tamaulipas*, *G. mexicanum*, *G. dentatum*, *G. dilutum* and *G. karnyi*, the new species differs in the same abdominal characters (see Figs 203, 204, 208, 209, 214, 215, 219–221, 224–227, 230–232), as well as a distinctly darker or not transversally striped colouration.

**Etymology.** This new species is named in memory of the orthopterist K. Ander, in recognition of his contribution to the study of taxonomy and phylogeny of Orthoptera.

### ***Glaphyrosoma* sp.**

(Figs 234, 274, 275, 298, 299)

**New material.** **Guatemala:** 4 females, San Marcos, Camino Fraternidad a Bojonal, latitude 14.9459, longitude 91.8806, 1600 m, 22.V.2012, J. Monzón, F. Camposeco (CAUD); female, San José Pinula, 27.III.1990 (UVGA).

**Description.** Female. Body rather large for this genus. General colouration of body dark brown to brown, but with slightly lighter (greyish brown) lower half of epicranium, with moderately lighter (almost light brown) areas on scape, ventrolateral parts of pronotum and distal half of abdomen (excepting its ventral part), and with distinctly lighter (almost yellowish and with tinge of ocher) mouthparts (however, labrum and palpi more or less whitish), venter of body, proximal half of femora, distal part of tibiae, all tarsi and ovipositor (Fig. 274, 275, 298). Structure of body similar to that of female of *G. karnyi*, but distal part of ovipositor with shallow subapical concavity on dorsal edge of upper valves instead group of small denticles (for comparison see Figs 292 and 298), and genital plate clearly longer (slightly elongate) and with apical spine somewhat wider and more rounded (almost not acute) at apex (Figs 234, 299).

Male unknown, but not excluded that *G. beretka*, described above from one male collected in Mexico very near border with Guatemala, conspecific with these females.

Length in mm. Body 30–34; pronotum 7–8; hind femur 22–23; ovipositor 10–12.

**Comparison.** This species is similar to *G. bulbosum*, *G. gracile*, *G. pushenkovi*, *G. anderi* and *G. beretka*, in more or less uniformly dark colouration of head dorsum and thoracic tergites, but it differs from the first four species in a shorter apical (narrowed) part of the ovipositor separated from the rest part of ovipositor by a shallow subapical concavity on the dorsal edge (see Figs 248, 257, 259, 296 and 298), and from *G. pushenkovi* in the female genital plate lacking distinct notch at the apex (see Figs 233 and 234). From *G. mexicanum*, *G. karnyi*, *G. dentatum*, *G. dilutum* and *G. tamaulipas*, this species is distinguished by a uniformly dark colouration of the most part of body dorsum (i. e. this part is not transversally striped and not more or less uniformly light brown), and additionally from the first three of them by the above-mentioned character of ovipositor or the absence of distinct denticles on its dorsal edge. Differences of these females from *G. beretka* are unknown (see above), and their belonging to this species may be supported or rejected only by further study.

### Family **STENOPELMATIDAE**

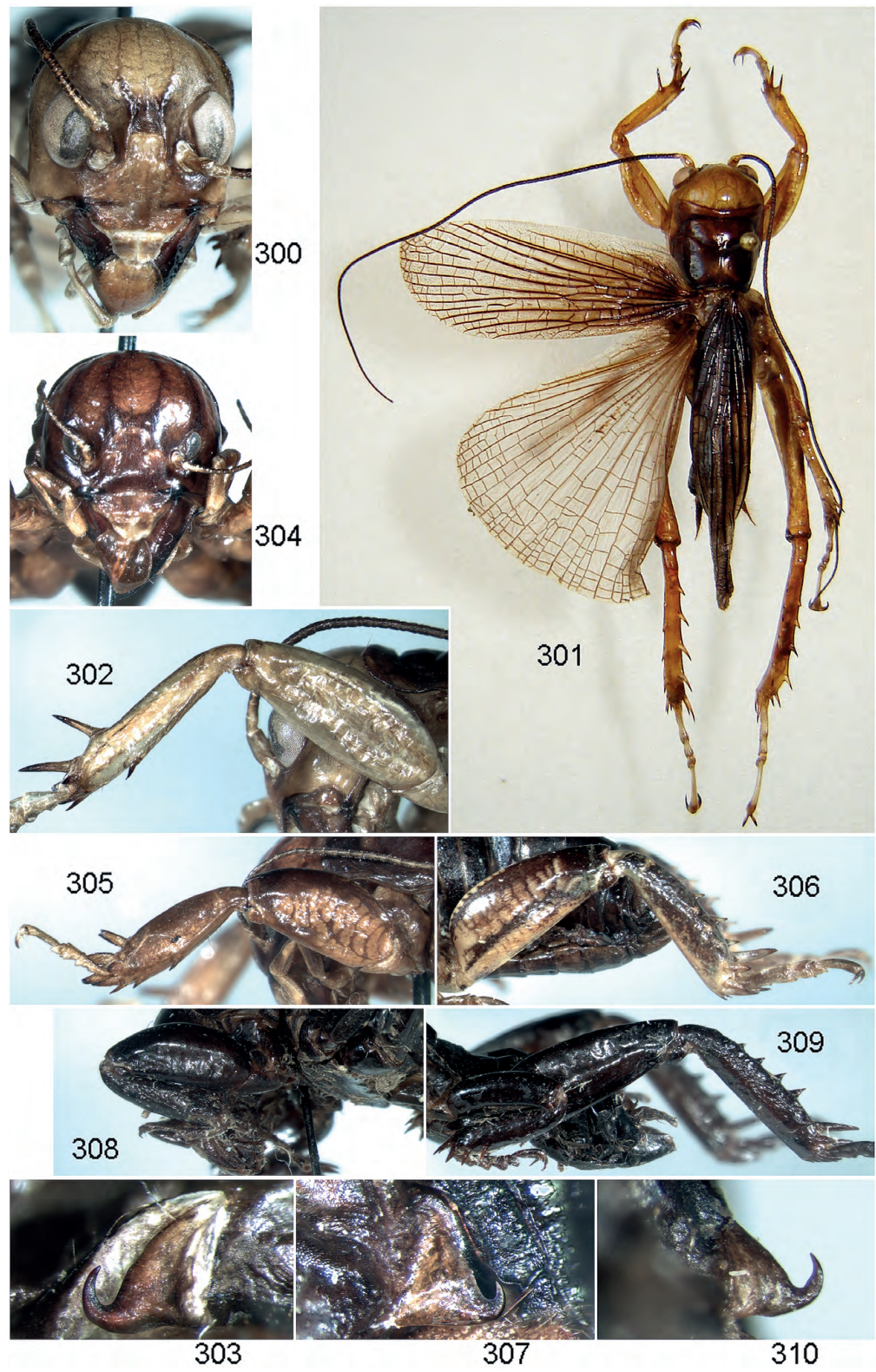
Burmeister, 1838

### Subfamily **STENOPELMATINAE**

Burmeister, 1838

**Note.** This subfamily is not divided into tribes. It includes only American representatives distributed from Central America to Canada. This subfamily is characterized by the anterior abdominal sternite forming a transverse rectangular plate closely compressed to metathoracic sternite by its anterior edge (in the other subfamilies, these sternites are more or less free in relation to each other as in majority of the Ensifera representatives). In Central America, this







subfamily consists of two genera as a minimum: *Stenopelmatopterus* Gorochov, 1988; *Stenopelmatus* Burmeister, 1838.

### Genus *Stenopelmatopterus*

Gorochov, 1988

**Note.** This genus may be distinguished from *Stenopelmatus* by the presence of a pair of almost keel-like but low ridges along the lateral edges of strongly reduced rostrum, comparatively large eyes and antennal cavities as well as scapes (space between these cavities is about 2.3 times as wide as scape), comparatively slender legs with rather long unarticulated spines on the hind tibiae, and the presence of wings. This genus includes three species from Mexico: *Stenopelmatus sallei* Saussure, 1859; *S. sumichrasti* Saussure, 1859; *S. sartorianus* Saussure, 1859. The first two of them are distinguished from the latter by much shorter wings and may be only nymphs of the latter species.

### *Stenopelmatopterus sartorianus*

(Saussure, 1859)

(Figs 300–303)

*Stenopelmatus sartorianus* Saussure, 1859

**New material.** **Mexico:** male, Chiapas State, environs of Tuxtla Gutierrez City near El Ocote Biosphere Reserve (Ocozocuahtla Distr.), Laguna Belgica Educational Reserve, 600–1000 m, partly primary / partly secondary forest, 30–31.V.2007, M. Berezin, E. Tkatsheva (ZIN); male, “Veracruz Llave Xochitla (7 km from) Zongolica”, 18°42.4'N, 97°03.9'W, 1142 m, 1–4.VIII.2011, V. Sinjaev (ZIN).

**Note.** The first male (Figs 300–303) is collected not far from a possible type locality of this species (Eades et al., 2015: Chiapas, Gutierrez). It is almost completely in accordance to the original description and redescription (Saussure, 1859, 1897), but its antennae are with only two proximal

segments light. The second male, collected rather far from the Chiapas State, is very similar to the first male but with a few small differences: it has a slightly more contrast colouration (most part of pronotum and abdominal tergites are almost black, not intensively brown); tegmina are with the dark brown (mainly longitudinal) veins slightly thicker, and with the costal part slightly narrower; and hooks of the tenth abdominal tergite are somewhat smaller. However, the hind tibia in both males are with four pairs of unarticulated spines (one outer proximal spine is very small, but the others are rather long). These specimens may belong to different subspecies of *S. sartorianus*.

Length in mm. Body 26–28; body with wings 33–36; pronotum (median part) 5.5–6.2; tegmen 22–24; hind femur 18–19.5.

### Genus *Stenopelmatus* Burmeister, 1838

**Note.** In the *Stenopelmatus* representatives studied by us, head rostrum is practically absent and lacking keel-like ridges, the eyes, antennal cavities and scapes are distinctly smaller (space between these cavities is 3.8–6 times as wide as scape), legs are diverse but more stout than in the previous genus and with rather short or very short unarticulated spines on the hind tibiae, and wings are completely absent. This genus possibly consists of three subgenera which sometimes considered as synonyms or as distinct genera (Eades et al., 2016): *Stenopelmatus* s. str. with 20–21 species (from Costa Rica to southern part of Canada); *Ammopelmatus* Tinkham, 1965 with two species from USA (California State); *Viscainopelmatus* Tinkham, 1970 with one species from Mexico (Baja California). However, here *Stenopelmatus* s. l. is not divided into subgenera, because this question is in need of an additional study

**Figs 300–310.** *Stenopelmatopterus* (300–303) and *Stenopelmatus* (304–310), male: 300–303, *S. sartorianus* (Sauss.); 304–307, *S. guatemalae* Br.-W.; 308–310, *S. minor* Sauss. Head in front (300, 304); body with left wings spread (301); outer side of fore leg (302, 305, 308); outer side of hind leg (306, 309); hook of male last abdominal tergite (303, 307, 310).

with especial attention to its genital structures.

***Stenopelmatus minor* Saussure, 1859**  
(Figs 308–310)

*New material. Mexico:* male, “Coyoacan Mexico”, X–XII.1926, D. Antipovitsh (ZIN).

*Note.* This male is in accordance to the original description and redescription (Saussure, 1859, 1897). It is characterized by a very small body size, uniformly blackish colouration, the space between the antennal cavities almost five times as wide as scape, very stout fore and hind femora (Figs 308, 309), moderately thickened hind tibiae with five inner and three outer unarticulated spines (these spines are short, but distal inner one is very small), and comparatively large hooks of the last abdominal tergite (Figs 309, 310).

Length in mm. Body 16; pronotum (median part) 3.9; hind femur 6.7.

***Stenopelmatus guatemalae***  
Brunner-Wattenwyl, 1888  
(Figs 304–307)

*New material. Mexico:* male, Chiapas State, 130 km of Tapachula City, environs of Ejido Las Golondrinas Vill. near El Triunfo Reserve, 800–1000 m, 13–17.V.2006, A. Gorochov, M. Berezin (ZIN). *Nicaragua:* female deutonymph, “St. Maria de Ostuma, W of Matagalpa”, 1550 m, 10.II.1985, L. Medvedev (ZIN).

*Note.* These specimens are in accordance to the original description of this species (Brunner-Wattenwyl, 1888). However, this description is somewhat insufficient for exact determination, and belonging of these specimens to the same species is problematic. If our determination is correct, this species (described from Guatemala) is here recorded from Mexico and Nicaragua. These specimens are similar to *S. minor* but slightly larger, with a generally reddish brown colouration (head is slightly lighter and with brown areas on the mouthparts and lower part of epicranium as well as with six brown longitudinal lines above this part;

legs are with brown and light brown striped patterns on the femora as well as with light brown tarsi; abdomen is from dark brown to black but with greyish brown cerci) (Figs 304–306), somewhat more stout hind legs having four inner and three outer unarticulated spines (these spines are similar to those of *S. minor*, but their distal inner spine is not very small), and the hooks of male last tergite smaller (Fig. 307).

Length in mm. Body: male 16.5, female deutonymph 15.5; pronotum (median part): male 4.6, female deutonymph 4.2; hind femur: male 7, female deutonymph 6.5; ovipositor (deutonymph) 1.8.

***Stenopelmatus talpa* Burmeister, 1838**

*New material. Mexico:* 2 males, “Contreras Mexico, 2400–2500”, XI–XII.1926, D. Antipovitsh (ZIN); 2 deutonymphs (male and female), “Coyoacan Mexico”, IV.1927, D. Antipovitsh (ZIN); 1 female, “Mexico” (ZIN); 1 female, Mexico City, in garden, 13.IX.1989, I. Kerzhner (ZIN); 4 deutonymphs (3 males and female), Xochimilco Distr. in Mexico city, 2200 m, in soil of small private garden, at night, 11.V–5.VI.2007, M. Berezin, E. Tkatsheva (ZIN).

*Note.* This species is rather widely distributed in the southern part of Mexico (Saussure, 1897: from Veracruz State to Oaxaca State). Its body size is distinctly larger than in *S. minor* and *S. guatemalae*, approximately as in *S. sartorianus*; its colouration is uniformly reddish brown to light reddish brown but usually with darker (from brown to almost blackish) abdominal tergites and most part of the abdominal apex; and the distance between its antennal cavities as well as structure of its legs are more or less intermediate between those of *S. sartorianus* and of the above-mentioned species of *Stenopelmatus* (but unarticulated spines of hind tibiae are as in the latter congeners in number: 4–5 inner and three outer ones).

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